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J. F. KELLY, Editor

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PHILADELPHIA SECTION

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"MODERN TRENDS IN STOKER DESIGN," by Otto De Lorenzo, Combustion Engineering Corporation, New York, N. Y.

"CATALYTIC CHEMISTRY," by Prof. W. D. Brancroft, Cornell University, Ithaca, N. Y.

Dinner 6:00 P. M. — Technical Session 7:30 P. M.

PITTSBURGH DISTRICT SECTION

Saturday, February 9th, 1929 — Wm. Penn Hotel, Pittsburgh, Pa.

Symposium:

"LUBRICATION"—

L. P. Tyler, Vacuum Oil Co.
C. W. Bryden, The De Laval Separator Co.
G. W. Hall, Keystone Lubricating Co.

Dinner 6:30 P. M. — Technical Session 8 P. M.

CHICAGO DISTRICT SECTION

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Paper on "Welding," by J. D. Wright, General Electric Company.

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Paper by Mr. Schuchardt, Chief Electrical Engineer, Commonwealth Edison Company, on "The Interchange of Power Between Central Station and Steel Plants," Dinner furnished by Commonwealth Edison Company.

MARCH

Combustion Engineering Division Meeting. "Recuperative Soaking Pits," by G. R. McDermott, Vice President Chapman-Stein Co., Mt. Vernon, O.

APRIL

"Application of Roller Bearings to Main Roll Drives, and Other Industrial Applications of Particular Interest to Steel Mill Engineers," by Mr. F. Waldorf, of the Timken Roller Bearing Company.

MAY

Golf Tournament—All District Sections Invited.

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EDITORIAL

Companionate Prosperity

By ROBERT W. WOLCOTT*

A spokesman for the professional purchasing agent recently said, "From the nature of his work, the purchasing agent is inherently an economist. He recognizes the dangers attending competition. He must have dependable sources of supply to keep his own plant in uninterrupted operation and he knows the concern which makes no money will not long remain a source of supply. He knows, too, that his company's welfare is dependent on general prosperity and that unprofitable operations in a basic industry jeopardize the prosperity of business as a whole. Finally, he knows that the reaction from unrestrained competition is the establishment of collusive price agreements, whereby producers seek to recoup their previous losses and incidentally to penalize the buyer for his brief period of advantage."

In this formula for good business we find much that is worthy of careful consideration. The buyer is not at heart desirious of getting prices so low as to drive a company into bankruptcy. Prosperity is not to be measured by the cheapness of articles, but by the ability of the public to consume at prices which will make production not only possible but reasonably profitable. Commerce cannot continue for long in an appreciable volume unless profits therefrom are shared.

The United States has adopted a formula of competition for the industrial structure. By this competition it is expected that individual ingenuity will be rewarded and that the consuming public will be permitted to share in the savings resulting from the normal improvements in machinery and methods. Mass production, however, has misled some industrial leaders into believing that success is obtainable only through the dominance and power to take business away from competitors. In that mad scramble prices have been the chief agency for obtaining contracts.

The Steel Industry has been a victim of certain men who have been blinded by their selfish desire to take business away from their competitors. They have done nothing to broaden the market for steel but have done much to destroy the public's appreciation of the value of the material. Charles M. Schwab, as President of the American Iron and Steel Institute, has pointed out that within recent years millions have been invested in the steel industry of the United States to cheapen the cost of production but relentless competition over prices has resulted in passing on all those savings to the consumers. As a result the industry is today earning less than five per cent on the capital invested.

The public formula for competition, as exemplified by the anti-trust laws, does not require that all advantages through invention, capital or management shall be dissipated in cheaper prices. It merely requires that those savings be shared with the consuming public. Prosperity is companionate, it cannot be a monopoly. If this is not soon clearly recognized by our influential industrial leaders, we will be constrained to go before Congress and ask for a statute which will as effectively restrain monopolies of prosperity as the anti-trust laws now attempt to restrain monopolies in industry.

Henry Ford was recently quoted as saying that it is not in the dollar saved but by the dollar properly circulated that individual wealth is accumulated. Frozen capital is just as useless as an idle factory. Monopolies, according to the verdict of the public of the United States, are detrimental to the greater prosperity of the country. Prosperity must be shared, it must be companionate if any real success is to be attained. Business is not just taking money away from consumers but rather the putting of commodities into use. A sale to be profitable must be profitable to both the buyer and the seller and it can be made profitable to both without wrecking the business of competitors.

The recent chairman of the Federal Trade Commission said on the eve of his retirement from public office, "Care in the pricing of products and the avoidance of secret departures from prices openly established will be favored to the end that industry may not be plunged into price wars to their impoverishment and demoralization. This rationalization of the pricing of commodities, I think, is universally recognized as the principal need of the country in the preservation of its present high tide of domestic prosperity, and it is certainly a mistake to assume that it is any policy of the Government or of any law on the statute books that price competition should be carried to an extent that threatens the demoralization or impoverishment of any industry. We have never encountered any public expression to the effect that it is a good thing for a seller to sell his goods at less than cost."

Such a clear statement as that, coming from a responsible public official, is worthy of sincere consideration. The opinions of no industry are greater than the carefully worded advice of Federal officials. The challenge has been thrown to the steel industry and to all industries. It is for us to accept it in a reasonable light and to put the dictum into practice. Economic law will force us to it if good judgment does not bring us to it before that. Prosperity is not mine alone. No man has a copyright on it. No corporation has a copyright on it. Prosperity is companionate. It must be shared with all if it is to last.

*President, Lukens Steel Company, Coatesville, Pa.

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Iron and Steel Plants Review

By BARTON R. SHOVER*

THAT the past year witnessed probably fewer major changes in the Iron and Steel Industry than has any equal period during the last two or even three decades, was explained by one executive as due to the fact that although many practicable improvements would reduce costs they would also result in increased outputs, and in most lines present capacities are equal to or greater than the demand. Although nothing spectacular appeared, nevertheless the industry improved in many respects.

The safety movement, initiated eighteen to twenty years ago, showed splendid results during 1928, many individual plants and some companies as a whole broke all previous records in this commendable work, so that the manufacture of iron and steel bids fair in the not distant future, to offer one of the least hazardous of industrial occupations.

BARTON R. SHOVER

Apparently more attention was given to quality of product during the past year than ever previously in the history of the industry. New uses for steel, both present and prospective, greater familiarity on the part of the user and keen competition among makers have all contributed to this end, so that the metallurgists and the physical laboratory are now as necessary as were the mill and the roller in the old days of tradition and rule of thumb.

The necessity of reducing costs has resulted in the installation of many labor saving devices and while there was increased conservation of waste products, both materials and heat, there is still room for much improvement in both.

The Public Utilities are becoming more aware of the desirability of steel works loads, and at least two made material reductions in their rates for this class of service, while others have that matter under serious consideration. No new contracts were signed for interchange of steel works and utilities power, but several negotiations are in progress, the most notable of which is in connection with a 44,000-volt system tying together five steel works power plants.

The only project launched during 1928 for substantially increasing output, was a new plant for the mechanical production of wrought iron.

Long strides were made in electric welding of tubes and structural work, but probably the one of greatest interest to the steel world was a substantial substitution of welded steel for iron, steel and malleable castings.

The most notable new section put on the market was the wide flange 33" and 36" beams and girders.

Several combines of the smaller independents were effected to reduce overhead and make better use of equipment for both semi-finished and finished product, and undoubtedly further consolidations tending towards the betterment of the industry will be made in the not distant future.

COKE

An increasing percentage of by-product coke is being made as is shown by the following production in net tons:

	1918	1920	1927
By-product	25,997,583	30,833,951	43,921,000
Bee-hive	30,480,792	20,511,092	7,004,000
Total	56,478,375	51,345,043	50,925,000
Percentage of by-product coke	46%	60%	86%

In 1928 there were 570 new by-product coke ovens fired, having a rated capacity of 3,733,400 net tons of coke. When it is considered that in addition to the ovens started that year, 348 of those put in service during 1927 operated only after the middle of November, it appears that the percentage of by-product coke will again break its own record.

PIG IRON

On December 1, 1928, there were 194 furnaces in blast, the smallest number since 1914, except the years 1921 and 1927, which showed 125 and 178 respectively, but the estimated tonnage for 1928 is higher than for 1927 and about double that of 1921, corroborating the belief that the daily capacity of active American Blast Furnace is still increasing.

During the past year a number of existing furnaces were rebuilt, all with increased capacity, but no new ones were added. Records show that there were 364 active and idle furnaces in the country at the end of 1927, and the figure given by some authorities for this year is 343, or a net reduction of 21 furnaces, most of which were merchant stacks.

Much of the increased capacity per furnace was obtained at a reduction in the amount of coke used per ton of pig, an improvement in practice credited by some operators to the higher percentage of by-product coke, which is more uniform in quality than that produced by bee-hive ovens.

*Consulting Engineer, Pittsburgh, Pa.

Although no new furnaces were built, some existing ones were improved by new bins, boiler and power plants, better ore handling equipment, safe mud guns, better gas cleaning systems and other similar items. The use of heat insulation on stoves increased and better gas cleaning allowed the use of smaller checker flues, the resultant increased efficiency of the stoves showing up in higher furnace production, decreased coke consumption and a larger volume of excess gas, all of which tended to reduce operating costs.

For years, the production of pig iron has not increased at as rapid a rate as that of steel. In 1914 the tonnage of pig and ferro-alloys was almost the same as that of ingots and steel castings, whereas during 1925-6-7, blast furnaces produced only a little over 81% of the tonnage made by steel works.

Available statistics are not subdivided in a manner to show just why pig iron has not kept pace with steel, but some deductions can be made which indicate tendencies.

The years 1913 to 15 inclusive, fairly well represent conditions before the war, while 1925-6 and 7 can be accepted as showing present productions. The following comparison of annual averages for those periods is of interest:

COMPARISON OF AVERAGE ANNUAL PRODUCTION

	Gross Tons			
Pig Iron	1913-14-15	1925-26-27	Increase	Decrease
Basic	11,766,865	20,064,283	8,297,418	
Bessemer and low phos.	9,990,848	9,522,566		468,282
Total	21,757,713	29,586,849	8,297,418	468,282
Net Increase			7,829,136	
Foundry	4,741,217	5,398,374	657,157	
Malleable	831,809	1,645,038	813,229	
Forge	334,091	200,487		133,604
All other	48,920	60,233	11,313	
Grand Total	27,713,750	36,890,981	9,779,117	601,886
Net Increase			9,117,231	
Ingots and Steel Castings				
Basic Open Hearth	19,641,496	37,961,642	18,320,146	
Acid Open Hearth	1,176,412	969,959		206,453
Total	20,817,908	38,931,601	18,320,146	206,453
Net Increase			18,113,693	
Bessemer	8,017,922	6,616,752		1,401,170
Crucible	108,292	14,697		93,595
All other	44,194	644,441	600,247	
Grand Total	28,988,316	46,207,491	18,920,393	1,701,208
Net Increase			17,219,175	

It will be noted that the decrease in pig iron was for Bessemer and Forge, also that the production of Acid Open Hearth, Bessemer and Crucible Ingots declined between the two periods under comparison.

Crucible, electric and other steels use so little pig in proportion to the other processes that their effect can be neglected. Because of lack of data in regard to how Bessemer pig was used, a yield of 90% is assumed from pig iron to Bessemer steel.

	1913-15	1925-27
Total Basic and Bessemer Pig	21,757,713	29,586,849
Less used for Bessemer Steel	8,908,802	7,351,947
Used for Basic and Acid O. H. Steel	12,848,911	22,234,902
Pig Iron		
Steel	61.7%	57.1%

The above indicates that the production of pig iron has increased at a lower rate than that of steel largely because of the manufacture of less Bessemer steel and because of a lower pig iron content in the open-hearth charge.

STEEL

While the tonnage of pig iron will not be as high as it was in several previous years, if the production of ingots continues during December at either the November rate or the average for the first eleven months, the total would reach more than 49,000,000 tons, which figure exceeds any previous annual production by nearly 3,000,000 tons.

The past year has shown an increased demand for alloy steels, particularly those having oxide resisting properties, both at ordinary and at high temperatures, and considerable success has been met with in supplying material to comply with such requirements.

Demands for special steels has also awakened new interest in electric furnaces to the extent that the largest furnace of this character ever built was put into operation on November 15.

The difference in the production of crucible and electric steel is very marked. Between the periods compared, crucible steel dropped from an annual average of 108,292 to only 14,697 tons, while electric steel increased from 41,200 to 600,247 tons.

Considerable merit is claimed for a recent invention which consists of shaking the ingot and mould while the steel is solidifying.

The increasing use of alloy steel has brought up a question which may become serious, because of the apparent impossibility of segregating open hearth scrap according to analysis. So-called "railroad scrap" is in demand for making many kinds of steel in which copper, chronium and nickel are supposed to be detrimental, and unless some method of sorting scrap, eliminating the objectionable elements during process, or rendering them harmless is discovered, the making of what has been called plain carbon steel will be increasingly difficult. Duplexing, the Talbot process or even a return to acid Bessemer steel have all been suggested as possible means for producing certain steels, but so far little, if anything, has been actually done towards solving this problem.

There was some increase in production per open hearth furnace also a few additional furnaces were installed, among which was one of 250 tons rated capacity. A new type acid open hearth furnace proved very successful in regard to furnace life, greatly reduced fuel consumption, increased yield and better quality of product. Two or three basic furnaces of this type are now under construction, and their operation will undoubtedly be closely watched to determine the value of this type as applied to the production of basic steel.

One furnace using a mixture of blast furnace and coke oven gas was started, and so far its operation compares very favorably with the oil fired furnaces in the same shop operating under otherwise the same conditions. This mixture of gasses has been successful abroad and many combustion experts state that the most economical use of gas is in metallurgical and heating furnaces, while coal

should be used under boilers, practically the opposite of accepted practice.

Some improvements have been made in auxiliary equipment, probably the most noteworthy being the application of worm drive and roller bearings to heavy duty cranes and charging machines.

THE ROLLING MILL

But few additions were made to rolling equipment in 1928, but many improvements were instituted in existing apparatus and in labor saving devices.

Probably the most outstanding feature in mill practice was the increased application of roller bearings on roll and pinion necks and for other heavy duty service.

Much of the interest in and application of this improvement is due to the efforts of the A. I. & S. E. E., which has maintained a Special Bearings Committee for several years, and has devoted sessions to this subject at their Annual Conventions.

So new is this application that practically no reliable data have been collected on which to estimate real requirements, consequently the sizes of bearings now in use have been based largely upon guesses and if the guess was high enough, the results have been satisfactory. A thorough combined scientific and practical study should be made of this situation to obtain facts on which to determine the size, and consequently the cost, for individual installations. Such a study would result in material savings of both investment and operating costs for the steel industry as well as in increased business for the manufacturers of roller bearings.

At least two large synchronous motors were installed, one on a rolling mill and one on a piercing mill, showing that previous installations of this type of drive have given satisfaction for certain applications.

Among the additions and improvements made were a 21" continuous sheet bar and skelp mill; a mill for rolling spike rod, concrete bar and other similar shapes from old rails; a seamless tube plant; and a lap and butt welded tube plant.

A great deal of attention was given to rolling mill heating furnaces, both as to principles and to fuel conservation.

Several recuperative soaking pits are apparently in successful use, their advantages being in lower first cost, simplicity of construction, saving in floor space and reduced fuel consumption.

Pulverized coal was substituted for producer gas in some regenerative furnaces by removing the checkers and recovering what heat is possible from the walls of the checker chambers.

Changes in design, particularly of roofs, of continuous heating furnaces resulted in better distribution and travel of the gasses thus increasing the output of the furnaces.

STRIPS

Although wide strip and other mechanically produced sheets did not play as important a part in the sheet market as had been predicted, or even expected, the mills for producing this product operated on a commercial basis and have proved very successful in making certain grades of product.

Two of these mills found it necessary to increase their heating capacity in order to meet demands, and one is now engaged in altering and increasing its capacity for annealing, pickling and cold rolling.

A 10½" x 18" two high hot strip mill with roller bearings on the rolls was put into operation, also a mill for hot rolling narrow strips of very light guages.

The tendency in cold rolling was towards greater reductions per pass, higher delivery speed and decreased amount of process annealing.

That this country leads in the cold rolling of flat material is well proved by the fact that a German steel company, after thorough investigation, installed American made cold rolling mills.

SHEETS

If wide strip accomplished nothing more than the improvements it has forced on the standard sheet mills in their endeavor to reduce costs, their construction would be justified, for almost without exception every plant has been endeavoring to reduce labor costs and to improve product. Apparently that branch of the industry, which has long suffered from tradition, has awakened to the possible danger of its new competitor.

One jobbing mill was completely modernized, some continuous pack-heating furnaces installed, mechanical devices for handling material in process and even for loading the finished sheet into cars, mechanical pack-openers and catchers are being tried, which together with many other changes under way or contemplated bid fair to effect material savings in labor.

Electric heat for annealing is on trial, one notable example being a furnace for bright annealing nickel sheets, some of the principles of which seem applicable to annealing steel.

To secure better quality, particularly for automobile sheets, a number of normalizing furnaces are in operation, while other types are being tested, and although none so far are ideal their product much more nearly meets the users requirements, than that of box annealing furnaces.

The results obtained last year might be described by paraphrasing the well known "Committee Report" that "The Steel Industry reports progress."

Review of Fuel Engineering During 1928

By MARTIN J. CONWAY*

We are entering another year of activity and research with the economical utilization of the nations resources.

The industrialist, manufacturer and in fact the general public are taking a keen interest in the development in fuel technology. The necessity for economizing in the use of fuel is being forced on the attention of the industries executives because the cost of fuel figures so largely in the average cost sheet and especially so in the manufacture of steel products.

It is estimated that the following quantities of fuel were consumed in the manufacture of iron and steel products during the year 1928:

MARTIN J. CONWAY

Coke consumed in blast furnaces including ferro-alloys	38,800,000 Net tons
Coking coal required to make coke	56,600,000 Net tons
Steam coal—power for steel plant prime movers, etc.	14,240,000 Net tons
Gas coal used in the manufacture of producer gas	8,900,000 Net tons
Fuel oil used for melting and heating	775,000,000 Gallons
Tar used for melting and heating	400,000,000 Gallons
Coke oven gas	283,000,000 M. Cu. Ft.
Natural gas	29,000,000 M. Cu. Ft.

Eliminating the coke, coke oven gas and tar as subsidiary fuels, the total used in net tons of coal equivalent is 86,474,000 and if this amount is divided by the total estimated ingot production for the year of 49,894,000 gross tons we have 3466 pounds of coal to produce one ton of ingots and the product therefrom.

Probably the most striking item in this tabulation is the large percentage of steam coal in proportion to the total, a percentage of 16.5 but when we realize that some of the older installations use more coal in energy to roll one ton of ingots than is actually required to bring the steel up to a rolling temperature this large percentage of steam coal can be readily explained.

The improvement of handling, screening and cleaning facilities at the mines have done much to improve the quality of the raw fuel during the past few years and the increased use of coal pulverizers has given an adequate outlet for the inferior screenings.

Much remains to be done in the improving of steel plant boiler houses in general and transition has been slower than in any other industry because of the very extensive problems met with when redesigning existing plants to effect fuel economics, but these problems must be faced. A large percentage of boiler plants are still worked in an entirely unscientific manner and the utilization of waste heat for steam production has not fully been taken advantage of.

The progress in the development of raising steam by the use of heat in the gases leaving furnaces would indicate that the item of coal for steam production can be considerably reduced.

There are now many successful installations of waste heat boilers on open hearth furnaces, heat treating and annealing furnaces, a few on soaking pits and an engineer who recently returned from Germany states that one of the steel plants in Germany (1) is using waste heat boilers on furnaces used in the forging process.

In Europe, there have already been several installations for making steam by the dry quenching of coke.

In this country, one such installation has been in successful operation for the past two years, (2) and, in the gas industry there are many successful waste heat boiler installations recovering heat from the waste gases before they are discharged.

In the chemical industry (3) one plant is generating steam at 800 pounds pressure and recovering 10,000 K.W. in two turbines before the steam is used for process work. In this way, a kilowatt hour is delivered at the switchboard for approximtely 3700 B.t.u. or only slightly in excess of the theoretical 3411 B.t.u. contained in a kilowatt hour.

In the roofing paper industry, contracts have been let for two units (4) each one of which is to generate 150,000 pounds of steam at 1800 pounds pressure and 820 deg. total steam temperature.

The steam will pass through triple expansion engines, directly connected to electrical generators, generating sufficient current to operate the plant and the steam is discharged from the engines at 60 pounds pressure where it is used in process work.

*Combustion Engr., Lukens Steel Co., Coatesville, Pa.

The problem in this particular case is to generate sufficient power for the plant from the steam required for process work and it was found in this case, that the engines at these high pressures gave 30% more power than could be received from turbines.

An engine at 900 pounds pressure and 800 deg. (5) has been in successful operation for the past four years and a recent inspection showed the cylinders and pistons to be in as good condition as when installed.

With these many examples of successful installations, of the recovery of power by the use of heat that has heretofore been wasted, the steel industry should be able to operate with a smaller direct expenditure for coal for steam raising purposes.

However, it must not be forgotten that the problems of the steam plant in the steel industry are in no way similar to those of the central station and there is abundant evidence to show that the real problem of the industrial plant is not generally understood.

During the past year there has been much activity in the improvement of both melting and heating furnace design incorporating such devices as guide the operator in maintaining maximum furnace output with minimum fuel input, but here again we have only scratched the top surface and in general we are behind our European competitors.

In Germany there have been established organizations since the war which, by proper control and measuring methods, have saved fifteen per cent on fuel alone in iron and steel production, and with properly directed effort similar economies can be effected in this country.

But, whatever economies can be obtained from the utilization of waste in the industry, the problem the fuel engineer has to face is the final cost of the product of his company and this is developing a distinctly different type of engineer, who is judged by the final operating cost rather than by heat balance.

(1) Krupp at Essen, Germany.
(2) Rochester Gas and Electrical Co., Rochester, N. Y.
(3) Semet Solvay, Syracuse, N. Y.
(4) Philip Carey Co., Inc., Lockland, Ohio. W. E. S. Dyer, Consulting Engineer.
(5) A. Borsig Co., Berlin Tagel, Germany, manufacturers of locomotives and heavy machinery.

1928 Steel Plant Developments

By A. F. KENYON*

A NUMBER of significant developments may be noted in the broadening application of electric drives in rolling mill plants during the past year. Of particular interest are the application of synchronous motors to many types of mills, the

A. F. KENYON

trend toward individual motor drive on each mill stand, the electrification of steam engine driven mills, and the installation of new labor saving mills to replace or supplement old high-cost mills.

*General Engineer, Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa.

Synchronous Motors

The accompanying tabulation shows the wide variety of types of mills for which synchronous motors have been supplied by one manufacturer during the first eleven months of 1928. Until quite recently, it was felt that synchronous motors were suitable only for mills having low starting torques and the rolling loads of which were relatively constant. However, great advances have been made in synchronous motor design and the motor characteristics can often be made such that synchronous motors may be applied to many types of mills.

One of the most extensive synchronous motor installations is at the Gulf States Steel Company on a Garrett rod mill and on wire drawing benches. On the Garrett rod mill, the old steam engine drives were replaced by five synchronous and one direct current motors. Synchronous motors are well adapted to such mills and relatively simple designs can be used as the starting torque requirements are not excessive, and during rolling the loads are very steady. This installation has been in service for several months, and is performing very satisfactorily.

An unusual synchronous motor application is that of a 4000 H.P., 100% power factor, 450 r.p.m. unit, installed to replace a steam engine on the 24" continuous roughing mill at the Farrell plant of the Carnegie Steel Company. This motor constitutes a major portion of the total load on 7500 Kv-a. steam turbine generating station, and it was necessary to very carefully design the synchronous motor and

its control in order that it might be started without causing excessive voltage disturbances on the small capacity supply system. A control system has been developed which permits starting this motor with very slight line disturbance, and with no noticeable shock on the motor during transition from the starting to the running voltage.

During September, the Columbia Steel Corporation, of Pittsburgh, California, purchased two 5000 H.P., 100% power factor, 82 r.p.m. synchronous motors for direct drive of continuous sheet bar and billet mills. Because of the rating and slow 60 cycle speed, the motors are of exceptionally large physical size. The stator frame diameter is about 26 feet, and the rotor diameter nearly 20 feet. With the exception of the bearing pedestals, all parts of these motors will be of rolled steel shapes, fabricated by electric arc welding.

The installations at the plants of the Danville Structural Steel Company, Hoskins Manufacturing Company and Superior Steel Corporation indicate the more general use of synchronous motors on small and medium sized roll trains, as found in many of the smaller plants, where power is purchased and a high power factor is essential if the best power rate is to be secured.

Individual Motor Drive

For some years, it has been the accepted practice to drive the tandem finishing stands of continuous mills with separate adjustable speed motors, in order to permit flexibility in making up rolling schedules, and to permit the easy control of speeds to prevent looping or stretching. More recently it has been shown to be desirable to also drive the intermediate and roughing stands with individual motors, or at least to drive these stands in groups of not more than two or three. Such arrangements eliminate a great deal of gearing or other mechanical drives; great flexibility is obtained, and in many cases the mill can be operated with one or more motors down for inspection or maintenance.

A notable example of an important continuous mill in which each stand is driven by a separate motor is the wide strip mill at the Middletown plant of the American Rolling Mill Company. The four roughing stands, on which the passes are short and where speed control is not at all necessary, are driven by induction motors of 800, 800, 1000, and 1200 H.P. capacity, respectively. As the metal is elongated, it may be in several stands simultaneously and speed control is necessary in order to control the looping or stretching between stands. The intermediate and finishing stands are therefore driven by three 2000 and four 3000 H.P. direct current adjustable speed motors. This strip mill is one of the largest yet installed and the total capacity of 21,800 H.P. of the eleven main roll motors is greater than on any other continuous strip rolling mill. The mill is capable of producing 54" wide by .109" thick or thinner strip from 6" thick slabs at a rate of 200 or more tons per hour, the maximum delivery speed is approximately 1000 feet per minute.

Power for the seven large 600 volt direct current motors is supplied by three 4000 KW. synchronous motor generator sets. Power is purchased at 66,000 volts and is stepped down to the consuming pressure of 6600 volts in a 24,000 Kv-a. outdoor transformer sub-station. By the future addition of more transformer tank radiators, the sub-station capacity may be increased to 36,000 Kv-a.

For the production of narrow thin hoop and strip the Carnegie Steel Co. are now installing a 12" continuous mill at their McDonald plant. In this case, the first six stands are driven in pairs by three motors and the remaining eight stands are individually driven. 30 foot long billets will be used, thus filling all stands simultaneously and adjustable speed motors are required on all stands. The twelve motors are direct current, 250 volts, totaling 5850 H.P., and are supplied with power from two 2000 KW. synchronous motor generator sets. The mill will have a range of delivery speeds up to 3000 feet per minute.

A 10" continuous strip mill was placed in service at the Cuyahoga plant of the American Steel and Wire Company during September. In this case the eight roughing and intermediate stands are driven in two groups of four each by a 750 H.P. and a 1200 H.P. motor, and the edging and finishing stands are individually driven by two 150 H.P. and five 500 H.P. motors. All motors are 600 volts direct current supplied from a 4000 KW motor generator set.

The five finishing stands are quite closely spaced in a tandem line, and the high speed at which the very thin strip is delivered makes it necessary to very closely maintain the speeds of the driving motors. This is accomplished by means of automatic vibrating regulators, operating in conjunction with synchronous pilot generators on the motor shafts to continuously regulate the shunt field currents and maintain a synchronous relation of motor speeds. By means of an adjustable ratio connection between the motors and the pilot generators, the ratio of the motor speeds may be changed by the operator.

Another mill at the American Steel and Wire Company and one at the Sheffield Steel Corporation will be controlled by similar methods.

Electrification

Numerous mills have been modernized by the installation of new electric drives to replace steam engine drives.

At the South Chicago plant of the Illinois Steel Company a 6500 H.P., 60/140 r.p.m., 700 volt, reversing equipment was installed on a 35" blooming mill. This mill is engaged in very heavy tonnage production of small bloom sections, and a motor of high full field speed was therefore selected to provide rapid acceleration with resulting high average rolling speed.

A 7000 H.P., 50/120 r.p.m. reversing equipment is being supplied to the Youngstown Sheet and Tube Company for the electrification of their 40" blooming mill. A departure from previous reversing motor construction is the stator frame which is being made from rolled steel slabs, bent while hot to the required circular shape. This requires a very heavy bending operation, as the frame section is about 9" by 60" and the complete frame weighs about 40 tons. Greater strength, and lower construction cost are advantages over the previously used cast steel frames.

Other instances of the electrification of old steam engine driven mills are the Garrett rod mill of the Gulf States Steel Company, the merchant mills of the Vulcan Crucible Steel Company, Phoenix Horse-

shoe Company and Danville Structural Steel Company, and the strip mills of the Superior Steel Corporation.

Transportation

Yard switching and other transportation costs are being analyzed, and it is found that costs can often be reduced by the use of some form of electric locomotive.

For yard switching, Diesel-electric locomotives have ideal characteristics and operating costs are much lower than for steam.

For the rapid handling of ingots between the soaking pits and 40" blooming mill, the Jones and Laughlin Steel Corporation have recently applied a 20 ton electric locomotive. The locomotive is equipped with two force ventilated 150 H.P. traction motors, electro-pneumatic control, air brakes, and other features usually found only on heavy service locomotives. The locomotive is capable of making 75 round trips per hour, and in order to do this operates at acceleration rates higher than used in any other service.

Auxiliary Applications

There has been a decided increase in the use of time element acceleration for auxiliary motor controllers. For some applications, current limit acceleration may still be used, but for the great majority of cases, the time element controllers are better suited.

A number of installations of runout table roll motors have been made. In one case the tables are to be started and stopped frequently and a method of operation has been developed which greatly reduces the heating from perviously used methods. For quick stopping the supply frequency is first reduced to about one-half the normal value by slowing the motor generator set to the full field speed of the driving motor, after which the roll table motors are plugged to rest.

Review of Certain Developments in Fuel Burning and Steam Generation During 1928

By CARL STRIPE*

During 1928 important advancements were made in the fields of Fuel Burning and Steam Generation.

CARL STRIPE

Over-all monthly efficiencies of 90 per cent are a matter of record.

*Combustion Engineering Corporation, New York.

Steam capacities of 1,000,000 pounds per hour, from a single unit, are now commercially available.

A steam pressure of 1800 pounds per square inch has been adopted for one industrial plant, while pressures of from 1200 pounds to 1400 pounds are being used in several public utility stations.

These are recognized achievements, which compared with the records of even twelve months ago, indicate rapid progress.

Buying habits have also changed and buying methods have improved.

Engineers have long since recognized the confusion, delay and expense which attend the work of correlating into a unified design, the many separate elements, each bought piece-meal from a different manufacturer.

There is a decided present-day trend toward the placing of contracts for complete fuel burning and steam generating units with one manufacturer.

Thus, the selection and co-ordination of equipment are simplified; the approval of drawings is facilitated; the proper timing of shipments is assured; erection work and the starting of the apparatus are expedited, and, one set of guarantees confine to one manufacturer, the responsibility for the performance of each individual element and the overall performance of the complete unit. The results secured from individual pieces of equipment are of importance only because they contribute to the process of steam generation. It is the overall performance of the en-

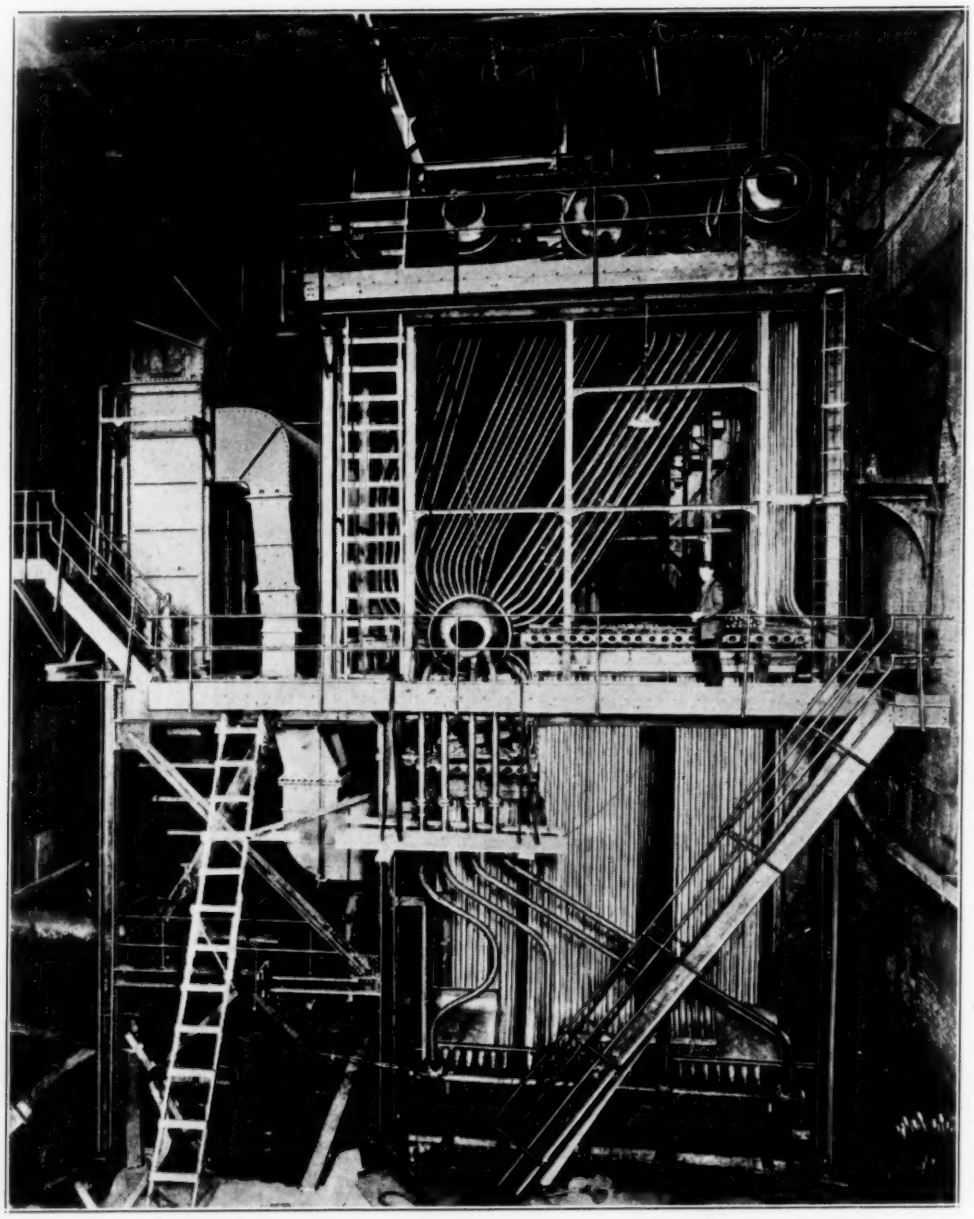

FIG. 1.

tire steam producing unit which actually determines how efficiently the energy of the coal pile is translated into steam at the throttle.

Many installations made during the past year reflect this tendency toward unified design.

The Steam Generating Unit shown in Fig. 1 is an excellent example of this co-ordination of the separate elements which comprise the complete unit. Two of these units were installed in an industrial plant during 1928. Each includes pulverized fuel firing equipment, water-cooled furnace walls, bent tube boiler and a plate type air preheater. Each unit has an efficiency of about 87% and a capacity of 90,000 pounds of steam per hour at a pressure of 445 pounds per square inch and a final steam temperature of 660 deg. fahr. (200 deg. fahr. superheat).

Fig. 2 shows two Steam Generators installed in a large industrial plant. Each generator delivers 100,000 pounds of steam per hour at 200 pounds pressure and a final steam temperature of approximately 550 deg. fahr. (160 deg. fahr. superheat). The overall efficiency shown by continuous tests, approximates 88%. The water-cooled furnace walls and the boiler are integral as shown in Figs. 3 and 4.

Pulverized fuel is fired tangentially from the four corners of the furnace and the water-cooled furnace walls absorb the heat of combustion by both radiation and convection. After the gases leave the furnace, they sweep the convection surface shown and then pass through a plate type air preheater which reclaims much of the heat that would otherwise be lost in the chimney gases.

This design is a logical development of the all-metal, water-cooled furnace which has proved so efficient in absorbing the radiant heat of the burning fuel and furnace gases. This construction also eliminates furnace refractory maintenance by the simple expedient of eliminating the refractories themselves.

Eighteen hundred pounds per square inch, the highest steam pressure ever adopted in America, is specified for the two Combustion Steam Generators now being built for the Philip Carey Manufacturing Company plant at Lockland, Ohio. Each generator will deliver 150,000 pounds of steam per hour, at a final steam temperature above 800 deg. fahr. at the throttle.

This will be the largest high pressure steam plant in the world and the operating cycle, which provides high pressure steam for power generation and low pressure steam for process work, will make it one of the most efficient steam plants ever installed.

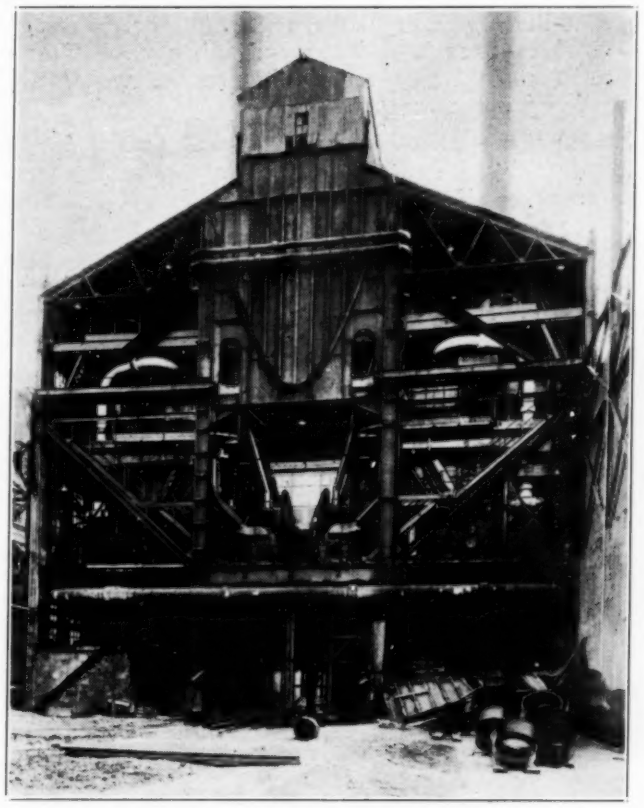

FIG. 2.

Two 1400 pounds pressure Ladd boilers were installed at the Northeast Station of Kansas City Power & Light Company during 1928. These units (see Fig. 5) are pulverized fuel fired and are equipped with water-cooled furnace walls of the all-metal, bare tube type. Each unit is capable of delivering 200,000 pounds of steam per hour at a final temperature of 720 deg. fahr.

The Youngstown Sheet and Tube Company, Campbell, Ohio, has recently placed in operation, one of the most modern steam plants in the steel industry. This installation comprises 6—2028 hp. bent tube boilers fired by a Lopulco storage type pulverized fuel system and equipped with plate type air preheaters. Each unit is capable of delivering 138,000 pounds of steam per hour at 400 pounds pressure and a final temperature of approximately 700 deg. fahr. (250 deg. fahr. superheat). The overall operating efficiency will approximate 81%.

The Allegheny County Steam Heating Company, Pittsburgh, Pa., recently placed in service, a Twin Ladd Boiler having 36,700 square feet of heating surface and designed for 250 pounds steam pressure no superheat, (see Fig. 6). The boiler is fired by double set Frederick Multiple Retort Stokers equipped

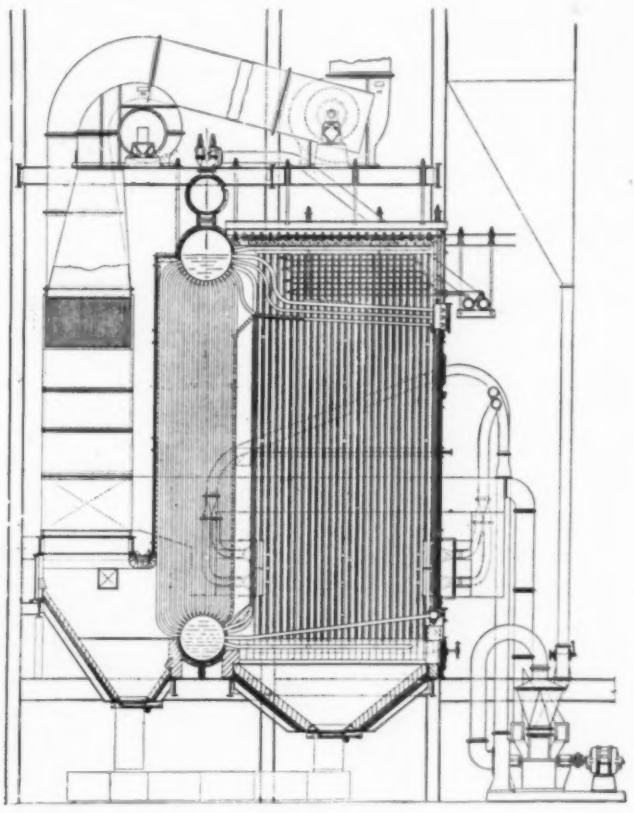

FIG. 3.

with 3 roll clinker grinders. All-metal, water-cooled furnace falls of the Fin Tube type are installed. This unit has a capacity of 400,000 pounds of steam per hour and an operating efficiency of over 80%. This boiler is believed to have the greatest steaming capacity of any stoker fired unit ever installed. The second unit, an exact duplicate of the first, is now in course of construction.

The new extension of the Pittsburgh Steel Company's steam plant at Monessen, Pa., is in course of construction.

This extension will include the installation of 4—

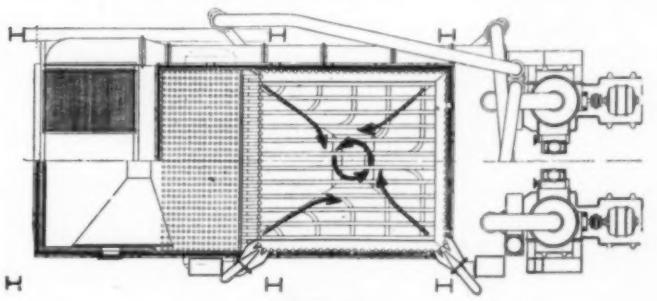

FIG. 4.

1425 hp. Ladd boilers—designed for 425 pounds steam pressure, 657 deg. fahr. final steam temperature (200 deg. fahr. superheat) and direct fired by Lopulco pulverized fuel systems.

Two of the furnaces at this plant will be designed to burn blast furnace gas, either as an alternate fuel, or in combination with pulverized coal.

The steam pressures adopted by Youngstown Sheet and Tube Company and Pittsburgh Steel Company—400 pounds and 425 pounds, respectively—are significant and indicate the trend toward higher pressures in modern industrial plants.

Fuel burning in metallurgical furnaces is being given considerably more attention now than ever before and there is a decided tendency towards a more careful choice of fuel and suitable furnace designs for the fuel selected.

Bituminous coal being the accepted basic fuel,

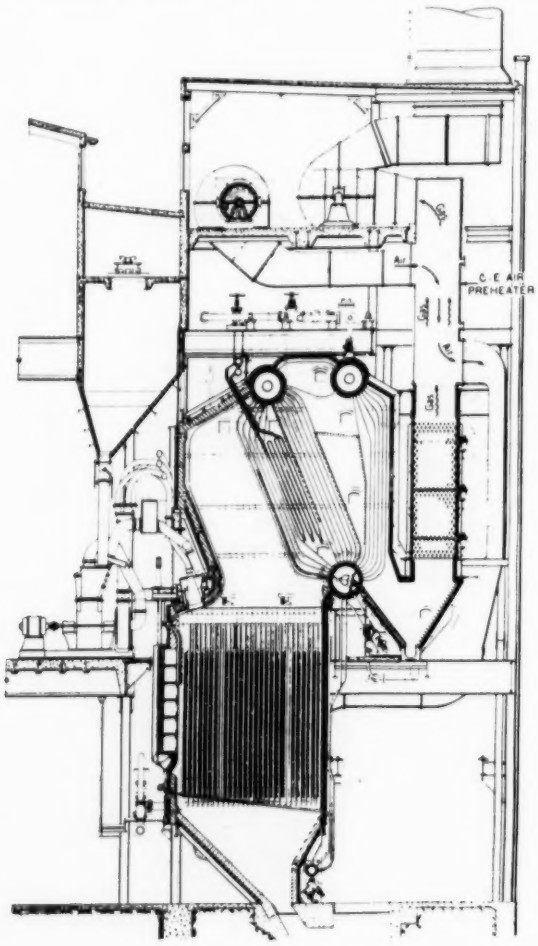

FIG. 5.

owing to the uncertain cost and varying heat value of liquid fuels, is being studied more carefully and its efficient use is becoming of increasing importance.

Heating furnaces of the non-regenerative type are being revamped, so as to allow for the flow of the heat into the steel at the most advantageous absorption rate.

Simple types of air preheaters, separate from the furnaces, using the waste gases diluted to the required temperature to heat the air for combustion are now commercially available and greatly increase the effective use of the fuel.

Furnaces of the regenerative type are also being simplified, both as to installation and operation, thereby greatly reducing the first cost, as well as reducing maintenance and operating costs, and, increasing the life of the installations.

More accurate data is available today than in the past, regarding the proper rate of heating and the diffusion co-efficient of steels, as well as the best method of assuring the proper flame condition for the particular work to be done.

Modern types of industrial furnaces are showing heat balances that compare favorably with modern power plant practice and no doubt the improvement will continue.

Of particular interest to the Steel Industry is the further development and adoption of Dry Quenching Systems for the cooling of coke. Through this recent development, steam is produced by the sensible heat in the coke discharged from the ovens. The steam production will average over 1000 pounds of high pressure steam per ton of coke, dry quenched. The value of this steam is sufficient to justify the adoption of dry quenching. The incidental advantages of better quality coke, reduced operating costs, less maintenance and improved labor conditions,—are all factors which should insure the wide adoption of dry quenching.

Perhaps the most important development in the field of fuel utilization, during 1928, was the completion of the first units of the K.S.G. Low Temperature Coal Carbonization plant near New Brunswick, N. J.

Engineers recognize the fallacy of attempting to improve appreciably, the fuel burning and steam generating efficiencies which are obtained today in the best plants. Over-all monthly efficiencies of 90%, offer no great opportunity for further improvement. Certain unpreventable losses exist and,

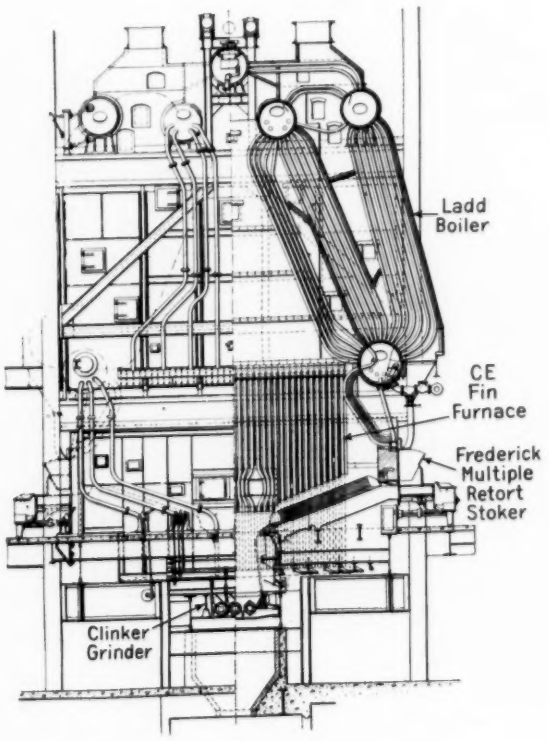

FIG. 6.

the law of diminishing returns makes it difficult to justify the cost of further refinements in present practice, in an effort to secure better efficiencies.

Economists remind us that, "coal can no longer be looked upon as merely a fuel to be wastefully burned, but must be considered as a raw basic product to be so processed that each of its con-

stituent elements may go to serve most fully its greatest economic use."

In the absence of a new thermodynamic theory it would appear that the processing of raw coal by low temperature distillation—with the attendent reclaiming of gas, tar, light oils and motor fuel—offers the most direct road to better over-all economics and the conservation of fuel.

The fuel remaining after processing by low temperature carbonization, is of firm structure, easily ignited and absolutely smokeless. The larger sizes make excellent fuel for domestic use and the fines are well adapted to steam generation in either industrial or public utility plants.

Contracts have just been closed which provide for the building of a low temperature coal carbonization plant at Lukens Steel Company, Coatesville, Pa.

One million seven hundred and fifty thousand cubic feet of high quality gas will be delivered daily to the Lukens' plant under a long term contract. This gas will be used for heating and steel treating throughout the plant, and will replace raw producer gas, now used.

The initial installation at Coatesville will consist of six retorts and will be capable of carbonizing between 500 tons and 600 tons of high volatile bituminous coal daily.

The ultimate plant is designed for double this capacity.

Lifting Magnets—Early History

By F. W. JESSOP*

DURING the year 1896 while employed at one of the largest steel plants I operated one of two cranes serving three 50 ton open hearth furnaces which produced about 375 tons of steel per 24 hours and including the hook ons, yard boss and weighers we used sixteen special heavy laborers

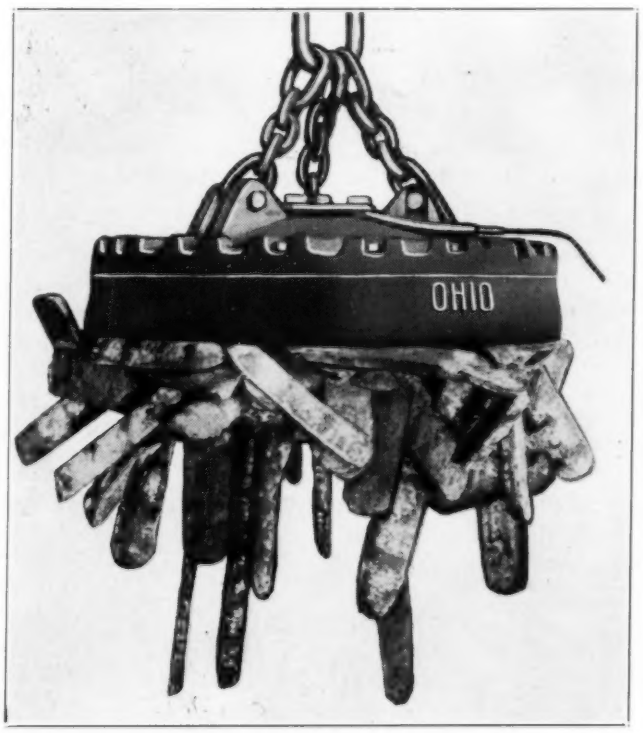

FIG.—1. A modern 65" Magnet weighing 8500 pounds and lifting 5200 Pounds of pig iron equal to 61% of its weight.

for the 24 hour run men who would earn today all told more than $80.00 per day. This is not taking into consideration the fact that today they would not work 12 hour turns. This figures out 20 cents per ton for filling the charging boxes. Today a ten ton crane with a standard 45" magnet will easily do the work of those sixteen men in five and a half hours working time.

Assuming that the only additional item required is the magnet; its total yearly cost for depreciation, interest, upkeep and current would amount to less than $400.00 or less than $1.35 per day against $80.00 per day and we have not deducted anything for the saving of two operators or the cost of the second crane which would not be required.

It is not necessary to prove to you the savings effected by the use of magnets whenever there is enough work to keep one magnet busy for an hour per day or more, but I felt you would be interested in the above figures of a case where the actual conditions were known. It is my purpose to try to show how we gradually arrived at the present day efficient magnet design and why it cannot be excelled except as to minor features that experience may dictate.

In 1897 I entered the Electrical Department at the Homestead Steel Works as a draftsman, (these days I would be called an Electrical Engineer and receive a salary instead of wages for doing the same kind of work). I found in the files quite a few magnet designs, all of the multipolar type and relative—light and flat. They were designed to lift plates or beams and did so but only one at a time and these operations effected no saving in cost even if they had been less vulnerable to shorts and grounds. They were soon abandoned. About that time Mr. Monnel, later President of the International Nickel Company worked on magnets for handling scrap but his design would not lift more than what one strong man could, due to the fact that it tied up a crane, it was not used.

About that time Mr. E. B. Clark, patented a shallow rectangular magnet design using one coil with a relatively large center and outer poles which proved satisfactory for handling plates, slabs, etc. A very large magnet of this type was made by Mr. A. C. Eastwood in the hope that it would lift scrap

*President, Ohio Electric & Controller, Co., Cleveland, O.

and pig iron but it only lifted one layer so it was abandoned.

In 1900 I designed and built several special two pole magnets at Howard Axle Works and they proved satisfactory because they lifted two billets from a car to a conveyor or to the tail end of the furnace. This was all that conditions required. It was faster than the work could be done with hooks and it permitted them to stock twice as many billets in the space available since no space was necessary between piles and only the crane was the limit for height. They were successful but their use was limited to this one or a similar purpose so they could not be called commercial.

FIG.—2. A 55" Magnet which rescued 600 tons of pig lost at Hanna Furnace.

From 1898 to 1904 designs and patents on magnets were offered by S. T. Wellman, Peel, Daniels and others whose names I do not know. One, the Peel Magnet, was an enormous round affair with a wire wound ventilated coil and numerous sliding poles which were intended to accommodate themselves to an uneven pile of scrap. It weighed about 10,000 pounds but didn't lift much and I leave to your imagination the task of keeping those poles straight and clean so they would slide and to keep a magnet in service with a ventilated coil.

During that time Mr. A. C. Eastwood made many experimental magnets, one an enormous two pole design dubbed the Elephant Ear Magnet. It weighed about 12,000 pounds and lifted about 1200 pounds of scrap. It was too heavy, expensive and costly to be practical.

In 1903 Mr. Eastwood built a round shallow magnet as one element of a magnetic clutch for a planer drive. It worked but was not satisfactory for short stroke fast work so he equipped it with a chain suspension and tried it on scrap iron as a Lifting Magnet.

It was 36" in diameter, weighed about 1800 pounds and lifted at least 600 pounds and we had the magnet of today. It was redesigned to fit it for the rough work of lifting and shortly a larger size 51" in diameter with a capacity of about 2000 pounds was brought out and the slow process of convincing the steel plants that Lifting Magnets were practical and great money savers was begun and you would hardly credit now how hard and slow that process was. There are single plants today that operate more magnets than were sold all told in 1905 and 1906.

It may be that others were working along lines parallel to those finally successful for Mr. Eastwood but if so I did not know about their work. I do know that Mr. Henderson was very active along these lines during this period and secured several valuable patents.

From 1906 to 1918 there were two makers of Magnets which gave satisfactory service and many imitators who tried to make cheap magnets but as

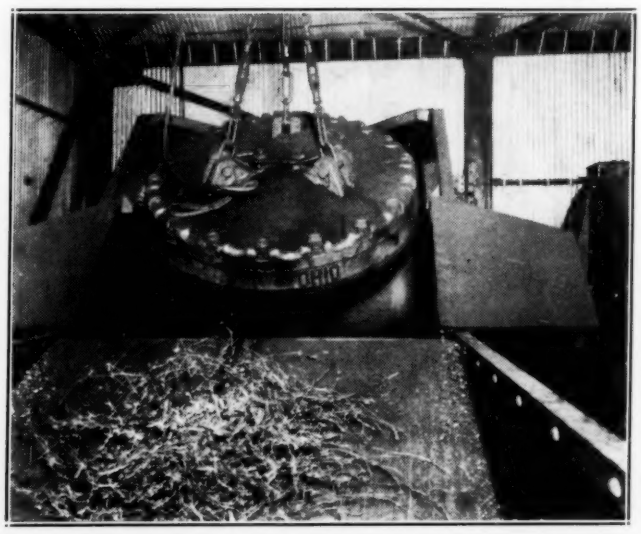

FIG.—3. A 65" Magnet taking tramp iron out of coal at mouth of pit. Capacity of conveyor 750 tons per hour.

one of my friends aptly said "if magnets only had to lift, they could be made cheaply" but they have to stand the abuse of strong arm operators and of fast hard work and of the vicious kick voltage when their circuit is opened so nothing but the sturdiest construction will stand up and cost must be a secondary consideration and when one remembers the big savings they make possible it is a little used magnet which does not save its own cost in the first six months. The cheaper magnet designs soon fell by the wayside.

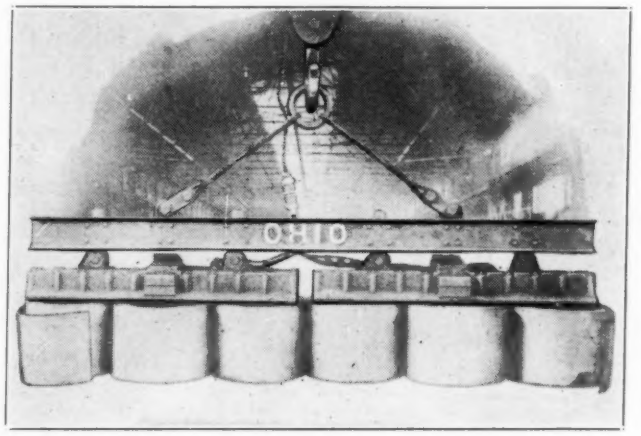

FIG.—4. Two long rectangular Magnets handling coils of strip steel at 1000° to 1200° F. temperature.

In 1918 I formed a company to build Magnets and having had the benefit of a long connection with their design and manufacture avoided most of the pitfalls yet we rebuilt almost all the magnets we sold in 1918 free of cost to all but ourselves and soon worked out the few bugs which had invaded our design which was similar in general design but included some important new details of construction. We were successful and are constantly striving to improve detail features of our magnets and magnet controllers.

Valuable features of the modern magnet controller are resistance to absorb most of the kick voltage when the magnet circuit is opened and limited reverse current to cause the magnet load to drop promptly. If the kick voltage is not absorbed it will get out on the line and cause failures in the fields and armatures of motors connected to the same circuit.

FIG.—5. Two 65″ Magnets on Electric Locomotive Type Cranes mounted on deck of a big Lake Steamer, save valuable time loading and unloading scrap iron.

The features which mark the present shallow round magnet design as most efficient for handling scrap and pig iron are; all magnetism on the bottom surface which does the lifting; long air gap from positive to negative pole which cause the magnetic lines to bunch down and pick up material that cannot touch either of the magnet poles themselves; big magnetic cross section providing millions of magnetic lines of force and an excess of magnetizing force so that the magnet tries to pick up everything under it with the result that the modern magnet often lifts a load of pig or scrap equal to more than 60% of its own weight (see Fig. 1) and the average lift equals over 40% of its own weight.

I will not bore you with pictures of ordinary magnet lifting but just a few out of the ordinary propositions might be of interest.

Fig. 2 shows a 55″ Magnet which rescued almost every pound of 600 tons of pig lost in a slip where the water was 32 feet deep at the Hanna Furnace in Buffalo.

Fig. 3 shows a 65″ Magnet collecting tramp iron from coal as it comes out of a mine on a conveyor 60″ wide and 1100 feet long carrying 750 tons of run of mine coal at 232 feet per minute. It is said this magnet saves more than its cost in usable pieces of iron per year in addition to saving crusher breakdown expense.

Fig. 4 shows two long Rectangular Magnets which handle rolls of strip steel at 1000° to 1200° F. temperature. They save a lot of labor expense and permit the coils to be piled in regular rows so the ones wanted can be gotten when needed.

Fig. 5 shows a Lake Steamer equipped with two cranes carrying 65″ Magnets used to load and unload scrap and they also have two sets of rail magnets to load and unload rails. The overhead expense of a great ship is tremendous and every hour saved is worth hundreds of dollars.

Fig. 6 shows a round Magnet carrying 3 heavy coils of hot strip steel, saving time, gas and storage space.

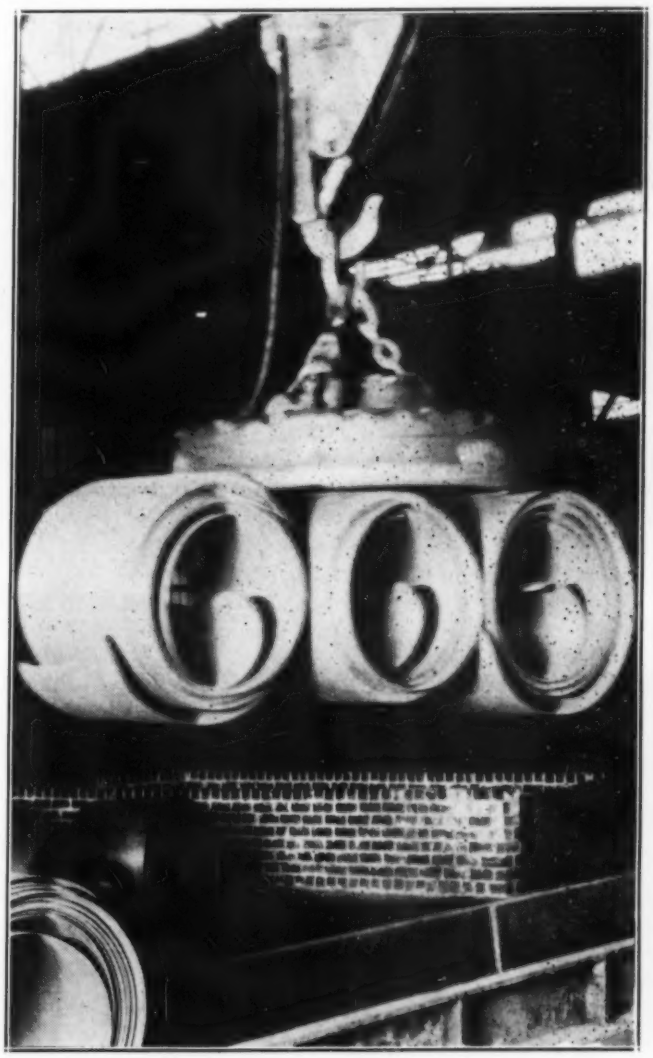

FIG.—6. A 55″ Magnet handling heavy coils of hot strip steel saving time, gas and storage space.

In another case not illustrated a 55″ Magnet takes long hot billets from a shear to an annealing furnace and next morning it unloads the annealing furnace thus saving time and gas for heating and increasing the capacity at that point.

I have not told you all the history of Magnet

development because I do not know it all. I have not tried to tell you all the work magnets are good for and most emphatically I have not tried to boost the Magnet I am most familiar with but I hope I may have given you some bits of information worth while.

1928 Developments in Steel Mill Drives

By J. D. WRIGHT*

THE existing capacity of General Electric motors driving rolling mills has been increased during the year 1928 by a-c. and d-c. motors, 300 horsepower and above, totaling over 100,000 horsepower. It is interesting to note that of this total, approximately 82% are d-c. machines. This is largely a result of the installation of several new continuous mills with individual motor drive for each stand of rolls.

A mill drive of unusual interest which is now being installed is that for the 36-inch reversing Universal slabbing mill at the Steubenville (Ohio) plant of the Wheeling Steel Corporation. This is the first instance in this country in which separate reversing motors are used for driving the horizontal and vertical rolls of the mill. The motor which will drive the horizontal rolls is a single armature, direct-current machine rated 7000 horsepower, continuous, 50/100 r.p.m., 750 volts. This motor is capable of developing a maximum torque of 2,000,000 pound-feet. Power will be supplied to the vertical rolls by a reversing motor rated 1650 horsepower continuous, 112.5/270 r.p.m., 750 volts, having a maximum torque of 212,000 pound-feet. These two motors will be supplied with power from a flywheel motor-generator set consisting of three 2400-kw., 750-volt, d-c. generators, driven by a 5000-horsepower, 400-r.p.m., 6600-volt, 3-phase, 60-cycle induction motor, and a 50-ton flywheel. This slabbing mill installation also represents the first reversing mill drive in this country having three generators operating in parallel.

The speed and direction of rotation of the two motors will be controlled entirely by means of a foot-operated master switch located in the pulpit. Both motors will be controlled from this one master and the control equipment is such that the proper speed ratio between the two drives will be maintained at all times. This ratio can also be very readily adjusted to compensate for differences in roll diameter. There will be no mechanical gearing of any nature between the horizontal and vertical rolls, entire dependence being placed on the control equipment for maintaining the correct ratio. As the operator will control the main drives entirely by means of his feet, his hands will be free to control various auxiliaries, and it is planned to operate the mill with only two men in the pulpit.

The Illinois Steel Company is installing new drives for a blooming mill and a structural mill. The blooming mill drive will consist of a 7000-horsepower, 50/120-r.p.m., 750-volt, double-unit reversing motor having a maximum torque of 2,200,000 pound-feet. This motor will obtain power from a flywheel motor generator consisting of a 5000-horsepower, 2200-volt, 3-phase, 25-cycle, 375-r.p.m. induction motor, a 50-ton flywheel, and two 3000-kw. generators. The 32-inch roughing stand of a structural mill will be driven by a reversing motor rated 3500 horsepower, 50/120 r.p.m., 750 volts, having a maximum torque of 1,100,000 pound-feet. This motor will be a duplicate of one-half of the 7000-h.p. motor on the blooming mill. The 28-inch finishing stands of the structural mill will be driven by an adjustable-speed, direct-current motor rated 6000 horsepower, 75/140 r.p.m., 750 volts. Power for the 3500-horsepower and 6000-horsepower motors on the structural mill will be supplied from a flywheel motor-generator set consisting of three 3000-kw., 750-volt generators, a 7500-horsepower induction motor, and a 50-ton flywheel. The generators on this set will be duplicates of those on the set for the blooming mill.

The number of continuous mills having stands individually driven by adjustable-speed motors continues to grow. The largest drive for a mill of this type is that for the 60-inch wide strip mill at the Wheeling Steel Corporation's Steubenville plant now being installed. The total continuous rating of the motors on this mill is over 20,000 h.p., and direct current will be furnished by three 4000-kw. motor-generator sets.

The Sharon Steel Hoop Company at Sharon, Pa., is installing a strip mill drive involving seven 600-volt, d-c. motors totaling 12,000 horsepower. Power will be supplied by two synchronous motor-generator sets each consisting of a 5600-kva., 514-r.p.m. synchronous motor and two 2300-kw., 600-volt, d-c. generators. A special control equipment will provide means whereby the speed ratio between the various motors can be automatically maintained within a fraction of a per cent and still be readily adjustable.

Another new continuous mill installation is a double-strand rod mill at the plant of the John A. Roebling's Sons Company, Trenton, N. J. The drive for this mill will involve four adjustable-speed, direct-current motors, one 2500 horsepower, one 600 horsepower, and two 800 horsepower each. Power for these motors will be supplied by a synchronous motor-generator set consisting of two 1750-kw., 600-volt, direct-current generators driven by a 4500-kva., 720-r.p.m., 2200-volt synchronous motor. The motors on this mill will also be equipped with special speed regulating apparatus.

The Timken Roller Bearing Company is installing

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three 2000-horsepower, 250/465-r.p.m., 240-volt, direct-current motors. One of these drives a 22-inch merchant mill. The other two will be coupled together, constituting a 4000-horsepower drive for a tube piercing mill. The Timken Roller Bearing Company is also installing two new 2300-volt, 60-cycle, synchronous mill motors—one 600-horsepower, 600-r.p.m. and one 1200-horsepower, 514-r.p.m. on the roughing stands of an 8-inch merchant mill.

The Jones and Laughlin Steel Corporation is adding another unit to its seamless tube mills at Aliquippa, involving six main motors, both a-c. and d-c., totaling 4500 horsepower.

The Youngstown Sheet & Tube Company at Youngstown, Ohio, is replacing several engine drives with motors. A 5000-horsepower, 514-r.p.m., 6600-volt, 60-cycle induction motor will drive an 18-inch billet mill, while another 5000-horsepower motor (a duplicate of the first) will drive an 18-inch sheet bar mill. A 2000-horsepower, 275/550-r.p.m., 600-volt, adjustable-speed, direct-current motor will replace an engine on the finishing stand of the 10-inch skelp mill at that plant.

The National Tube Company is installing in its McKeesport plant six adjustable-speed, direct-current motors totaling 6600 horsepower. Power will be supplied to these motors by a synchronous motor-generator set consisting of two 2000-kw., 600-volt, 500-r.p.m., direct-current generators driven by a 4400-kva., 514-r.p.m., 6600-volt, synchronous motor with direct-connected exciter. The main drive motors on the mill will be started by variable voltage (Ward Leonard) control of the generator voltage. This equipment will drive the six finishing stands of a 13-inch skelp mill, replacing an old engine-driven mill.

Synchronous motors for driving constant-speed mills are increasing in number every year. As mentioned above, two are being installed on the merchant mill at the Timken Roller Bearing Company's plant. Another 1500-horsepower motor will drive the roughing stands of the Wheeling Steel Corporation's wide strip mill. The Pittsburgh Steel Company is installing a 3000-horsepower, 150-r.p.m., synchronous motor for piercing mill drive. In addition to these, various smaller units will be used for driving merchant, brass and other mills.

Time limit control of acceleration has now been in use on mill auxiliary drives for three or four years, and has proved very successful. The development of the escapement type of time limit relay has permitted the application of the time limit method of control to main roll drives, both a-c. and d-c. This escapement type of relay is extremely simple and is adjustable over a wide range of time. Once adjusted, the timing is definite and is not affected by temperature or other external conditions. The magnetic type of definite time limit relay used on mill auxiliary controls is equally simple and accurate, but cannot be adjusted for as long timing between steps as can the escapement type.

In the field of auxiliary control, there has also been developed a cam-operated type of master switch, especially designed for steel mill service. This switch is simple and rugged and all parts are readily accessible. The contacts and some portions of the mechanism are interchangeable with similar parts of cam-operated limit switches.

An interesting installation of auxiliary control is that on the rail mill at the Bethlehem Steel Company's Lackawanna plant. The control is so arranged that only a single control wire is required between each master switch in the operator's pulpit and its contactor panel in the control room. With this system the required features of forward and reverse control and undervoltage protection, which ordinarily require at least four wires between each master switch and its contactor panel, are retained.

The MD-400 type of motor for mill auxiliary drives—the motor which completely meets the recent standardization rules of the Association of Iron and Steel Electrical Engineers in all respects as to rating, speed and dimensions—is now in successful operation in a large number of steel mills, one installation of almost 200 motors having been in use for a year and a half with no troubles.

As regards the construction and design of main roll motors, much of this machinery is being fabricated from rolled steel products by means of arc welding. The magnet frames of practically all of the large d-c. machines are now constructed from rolled steel slabs with feet and lugs welded to them. The stator frames of synchronous and induction motors are fabricated from steel plates and bars welded together, and the rotors of some of the synchronous motors are also being fabricated from plates and slabs.

In the field of yard transportation, the Diesel-electric locomotive is proving extremely successful in reducing operating and maintenance costs. The American Rolling Mill Company's plant at Ashland, Ky., now has two 300-horsepower locomotives of this type in service and two more are being built. These units weigh approximately 70 tons each. This same company also has in service at its Middletown, (Ohio) plant, a 600-horsepower, 100-ton locomotive.

The Donner Steel Company of Buffalo has in service one 300-horsepower, 66-ton unit and three more are being built .

Gaseous Fuels

By WALTER FLANAGAN*

Probably the greatest advance in the utilization of Gas is the increased realization of the value of Gaseous Fuels in the Steel Industry, since no other fuel has the advantage of ease of obtaining close regulation and high efficiency.

For instance, blast furnace gas is no longer looked upon as waste heat, but is considered as part

*Special Engineer, Carnegie Steel Co., Pittsburgh, Pa.

of the furnace product to be utilized as effectively as pig iron.

This has led to improvements in

Stoves and Burners
Improved Boiler Settings and Burners
Better Supervision of Combustion
Mixing of Blast Furnace Gas with other Gases
Better Cleaning.

Mixing of Blast Furnace Gas with Coke Oven, or other Gases of higher heating value, not only increases the amount of gaseous fuel available for metallurgical purposes, but also, judging from reports at hand, makes possible a gas which may utilize the benefits of regeneration.

In line with the principle of making gases meet the requirements of the consuming unit, we have the development of tar, or pitch gasifier in order to enrich leaner gases as desired. The same principle is also leading to better cleaning of blast furnace gas, and to desulphurization of coke oven gas.

Despite the fact that coke ovens have provided a greater supply of metallurgical gaseous and liquid fuel than ever before, gas producers are still required in the old fields of use, as well as for the utilization of small size coke. Improved construction, in cases of new installations, and improved practice, due to better supervision in cases of old units, mark the developments in this line.

The second greatest development in the utilization of gas is the development of the demand for control. It has been realized for some time that in order to obtain the maximum benefit from gas, some means of control is necessary. (Even in domestic appliances this is roughly accomplished by the gas companies regulating the pressure either in the distributing mains, or in the houses, and by adjusting gas and air openings at burners.)

The open hearth furnace, long the most difficult unit in the steel works to regulate, is now being equipped with automatic control for combustion, draft, and furnace atmosphere—the same is true of reheating furnaces.

All of the control is greatly simplified and accuracy increased by the use of gas. This also holds true of installations where control is obtained by intelligent manual operation, as well as in cases of complete automatic equipment.

In order to fully utilize producer gas, uniformity of heating value and temperature is necessary. This has brought about a demand for closer control of the gas producers, accomplished today principally by personal supervision, but ultimately leading to full automatic regulation.

All of the previously mentioned improvements, such as utilization of low grade gases, control of furnace atmosphere, and the realization of the value of gaseous fuels, have paved the way for the acceptance of higher types of recuperators, and accelerated the development of the metallic and the regenerative metallic recuperator.

Arc Welding

By GROVER HUGHES*

In 1881 de Meritens discovered he could unite parts of storage batteries by connecting the work

GROVER HUGHES

to the positive pole of a fully charged storage battery, the negative pole of the battery was connected to a carbon rod. An arc was struck by touching the carbon rod to the work and withdrawing it slightly. The heat generated, fused the metal parts together. The arc being applied similarly to that of the flame of the modern gas torch. The same process is used today in carbon arc welding, the only difference, a generator is used for supplying power instead of a storage battery.

Four years later, 1885, Mr. Elihu Thomson developed and built an experimental machine for butt welding.

Fifteen years after Mr. Thomson made his butt welder, Mr. F. P. McBerty in 1900 made the first spot welder and there on made fans by spot welding the blades to the hub. This is believed to be the first article ever commercially welded by either of the three welding methods, Arc, Butt or Spot.

Strange as it may seem but nevertheless true, no one but the inventors themselves could see any possibilities in the new processes at first and the development was slow.

The great war brought to the managers in the industrial plant, to the engineers, the chief electricians, consulting engineers, ordinance designing engineers and maintenance men, many new opportunities.

Emergency needs must be supplied. Additions and alterations to factory systems, extensions had to be built, repairs made, all with the general idea

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to increase factory output, and hold down factory costs. Man power was at a premium.

The war emphasized the inherent economy and flexibility of welding. There was but one thought in mind—"Win the war." Soldiers must be equipped and delivered over sea 4,000 miles to the firing line. Munitions and supplies must be delivered. Never before had such a problem confronted a nation. Our Allies were urgently in need of men. Their morale was low. Our ships were inadequate, the crews of the interned German ships damaged the engines putting them out of commission. It was then 36 years after the discovery of the art that arc welding came into its own. The most striking and forcible example of the saving of both time and money effected by the use of electric welding that can be found, is the case of repairing the interned German ships. There were 109 German ships interned in the United States when war was declared in April, 1917.

The crew of each ship damaged the engines by breaking the cylinders, steam chests and frames.

This was done with the idea that new patterns and castings would be required. To machine the castings and reset the engines would require from two to two and one half years. By that time the war was sure to be over. The estimated cost of repairs to the first ship amounted to $32,000 and time required from twelve to fourteen months. By means of electric welding the work was completed in fifty-two hours for a cost of nineteen hundred dollars for the actual work done.

It is customary to test marine engine cylinders twenty per cent in excess to the working pressure. These repaired cylinders were subjected to fifty per cent in excess of their normal working pressure. Not a failure of any repaired cylinders resulted from this severe test and the 109 ships were placed in service in less than eight months by the use of electric welding. Repairs were easily made in places which would have been extremely difficult, if not entirely inaccessible, had not a method of welding which required a flux been employed. Thanks to the Yankee genius.

The manufacture of munitions presented a fertile field for spot and butt welding and during the war days resistance welding developed so rapidly that eighty per cent of the different products of war material had some form of welding, (arc, spot or butt) during its process from raw stock to finished product. It was at this time that welding was first used in building construction. The Russian Government made a request for bids on portable steel buildings for hospitals. Their specifications were very rigid. December, 1914, the Truscon Steel Company designed and built the first all steel all welded building. As the war continued larger buildings were required and the airplane hangar was the next step in application of welding to larger structural sections.

The development of welding has been slow, partly by the structural engineer being familiar with only the riveted joint and not having information at hand on welded joints. A properly designed welded connection of structural sections is entirely different in appearance and is not calculated the same as a riveted section. The structural engineer could see a rivet head on both sides the structural section and knew that there was a connection between them. The slight depression of spot welding or the small raised spot in button welding gave them nothing to see that a union of metal did exist between the sections. Reliable data of strength of arc or spot welds was not at hand. To collect this data would require considerable time and expense. It was evident this information must come from the fabricating companies and the builders of welding apparatus. After sufficient data was collected building codes must be changed accordingly.

Welding in the structural field must be done under capable expert supervision as one failure will undo all the work that has taken years to accomplish.

The late Mr. Lamme once said: "The best text books for students usually are written by those most familiar with the art of teaching." So should the best technical books for active workers be written by those who are in the midst of such work. Otherwise the text is liable to lag behind the actual practice. In the welding art the growth has been so rapid and the changes in practice so numerous, that only those directly in touch with the many developments are able to tell the up-to-date story. Unfortunately, it is only in rare cases the doer is the teller. That is, too often he delegates the telling of his work to others, while he continues to do. Lack of practice in writing is often the cause of this.

There is no better magazine for the electrical man, whether it be the electrical engineer or the foreman in the electrical or mechanical department than the Iron and Steel Engineer. In it there is a sincerity in the facts presented and a logic in their treatment which appeal strongly to the practical man.

Safety Stimulates Industrial Friendship

By J. A. VOSS*

The "Safety First" movement has gone farther than merely installing safeguards and training men in first aid work. In many plants it is leading to the betterment of all working conditions, such as providing good ventilation, good light and healthy sanitary conditions, in fact it is its aim to improve every condition which will make for the better health, efficiency and happiness of employees.

"Safety First" means exactly what is spells. There must be no "rare" nor "medium", but a "well done", "hard-boiled" "Safety First".

*Director of Safety and Compensation, Central Alloy Steel Corporation, Massillon, Ohio.

Every industry, regardless of its size, should not be asleep, waiting until an accident occurs, or until some outsider points out defects. They should be "up and doing" attending to little and big things alike. "Safety First" is here to stay; there is no getting away from that fact, so every employer should interest himself in meeting it not only halfway, but all the way.

Our past experience indicates that accident prevention work is governed by two important factors: engineering, relating to the physical side; and education, pertaining to the enlightenment and instruction of employees in safe working methods. Both of these activities, we have learned, are of the utmost importance and are interdependent. Let us consider briefly some of the more important things that may be expected of the department head in both of these branches of endeavor.

J. A. VOSS

It must ever be borne in mind that the interest and hearty co-operation of all employees are of paramount importance in a successful campaign against accidents. This is a phase of organized safety work which will bring about such a happy condition. One of the first things conducive to this co-operative interest is the development and maintenance of a high physical standard. The house must be set in order, so to speak, if the good will of the men is to be gained. This means that new construction and new equipment should embody every practical feature incident to safety; existing machinery hazards and other physical hazards should be corrected; and good housekeeping, ever a diminant factor in the prevention of accidents, should receive the utmost attention. To the management, engineering staff and department heads we must look for the solution of this problem.

Friendship is one of the greatest factors in the development of an undertaking and there is no better way for employers to stimulate friendship with their employees than through the safety movement. Industry is as much dependent upon friendship as is any other kind of activity. There can be no solution of the problem of industrial unrest until there is a more general recognition of the importance of the higher ideals and spiritual values in industry. There is no movement which is more likely to aid in binding employer and employee more closely together than the aims and ideals which underlie the movement for "Safety First" in industry, in the home and in public life. The cause of safety is the apostle of good will and of peace in industry and it is the keystone to the industrial arch.

Today it should not be necessary to prove what was once a theory—that accidents can be prevented. It should not be necessary to present the economic and many other advantages. Those industries that have made a real test of the value of organized accident prevention work have reaped a harvest of benefits in efficiency, economy, production, friendship, company spirit and above and greater than any of these, in the humanizing of their industries in a way and to a degree that was never before imagined. The public, too, has become convinced of the necessity and practicability of conserving lives and limbs, and there is at this time a growing sentiment for a safer and saner citizenship that bespeaks a more enlightened people because of a greater concern for human welfare.

Eventually your success is to be measured not only by the statistics of the number of reductions in accidents, the amount of dollars saved, but also by the results obtained in Safety. Whenever you prevent by your labor an accident, you do more than save a life, you save a home. The boy and girl now have an opportunity because the breadwinner is alive; they would not have had money for an education; they would have been crowded into the factory before their time; now they can go to school. You save tears. You prevent heartaches. You minister to life, make it happier, give it a chance to be pure and true. That is what we do when we save lives and limbs. What better way is there for employers to develop friendship in industry than to realize the glory and beauty of service in the daily life of employees.

The Company and men are in partnership in safety work. The men will respect the company's teaching more when they understand its motive. It makes for better working conditions, greater loyalty and improved conditions generally and gains the attention and confidence of employees and leads them to the awakening of that mutual interest between employer and employee.

The high standard of safety in turn explains the reason for the dominant note—that of co-operation. There could not exist anywhere a finer spirit of co-operation by employees, nor greater willingness to respond to any call for assistance in the solution of the many and varied problems that are constantly confronting us in effective and organized safety work.

Safety will establish confidence in industry and will bring about a state of mind of fair dealing, of stability of character; an expression of universal brotherhood. Safety is one of the greatest humanizers of life's toil. It is the fusion point at which employer and employees interests can be welded together for a common purpose.

This great enterprise of safety to which you have put willing hands is just one phase of a still

bigger thing—the sense of universal brotherhood. We are becoming more and more conscious that we are all wrapped up in one bundle of life; that none of us liveth to himself and none of us dieth to himself. More and more in this favored land "society" is becoming just all-of-us, and neither workman, supervisor nor employer can stand aside and say that he does not belong. So it is with the safety movement. It will bring about greater friendship in industry, as folks who work together should plan together, confer together and act together to eliminate carelessness and thoughtlessness, and if this is done, you will begin to realize the amazing cumulative effect of greater safety and greater friendship in industry.

Recent Developments at Sparrows Point †

By F. O. SCHNURE*

THE Maryland Plant of the Bethlehem Steel Corporation since the inspection of the Philadelphia Section of the Association of Iron & Steel Electrical Engineer in May, 1926, has made additions comprising a battery of sixty coke ovens, the rebuilding of one of the 400 ton blast furnaces into an 800 ton furnace, three stationary open hearth furnaces, and the rebuilding and enlarging of some of the others, a 27-24-21" Continuous Sheet Bar and Skelp Mill, a 12" Skelp Mill, twelve Tin Mills, four Sheet Mills, two Buttweld Mills and two Lapweld pipe mills and power facilities consisting of a 20,000 k.w. turbine with boiler and coal pulverizing plant.

The additional coke ovens, open hearth furnaces, sheet and tin mills, followed the existing units in general design and layout. The other plants involved manufacturing facilities that are new to this plant and some of them in turn have features that are new to their art.

The 27-24-21" Continuous mill designed to roll skelp and sheet bar up to 22¼" wide from blanks prepared by either of the two blooming mills preceding it, is located in the same building and under the same cranes as the 24" and 18" continuous mills. A 4000 HP, 83.3 RPM, 6600 volt synchronous motor drives the roughing train consisting of four stands comprising the 27"-24" mills. A 6500 HP, 187.5 RPM, 6600 volt synchronous motor drives the first four stands of the 21" mill. The next four stands are driven by a 6700/5000/3300 HP, 500/375/250 RPM 6600 volt wound rotor induction motor with

*Elec. Supt., Bethlehem Steel Co., Sparrows, Point, Md.
†Presented before Philadelphia District A. I. & S. E. E., March 3, 1928.

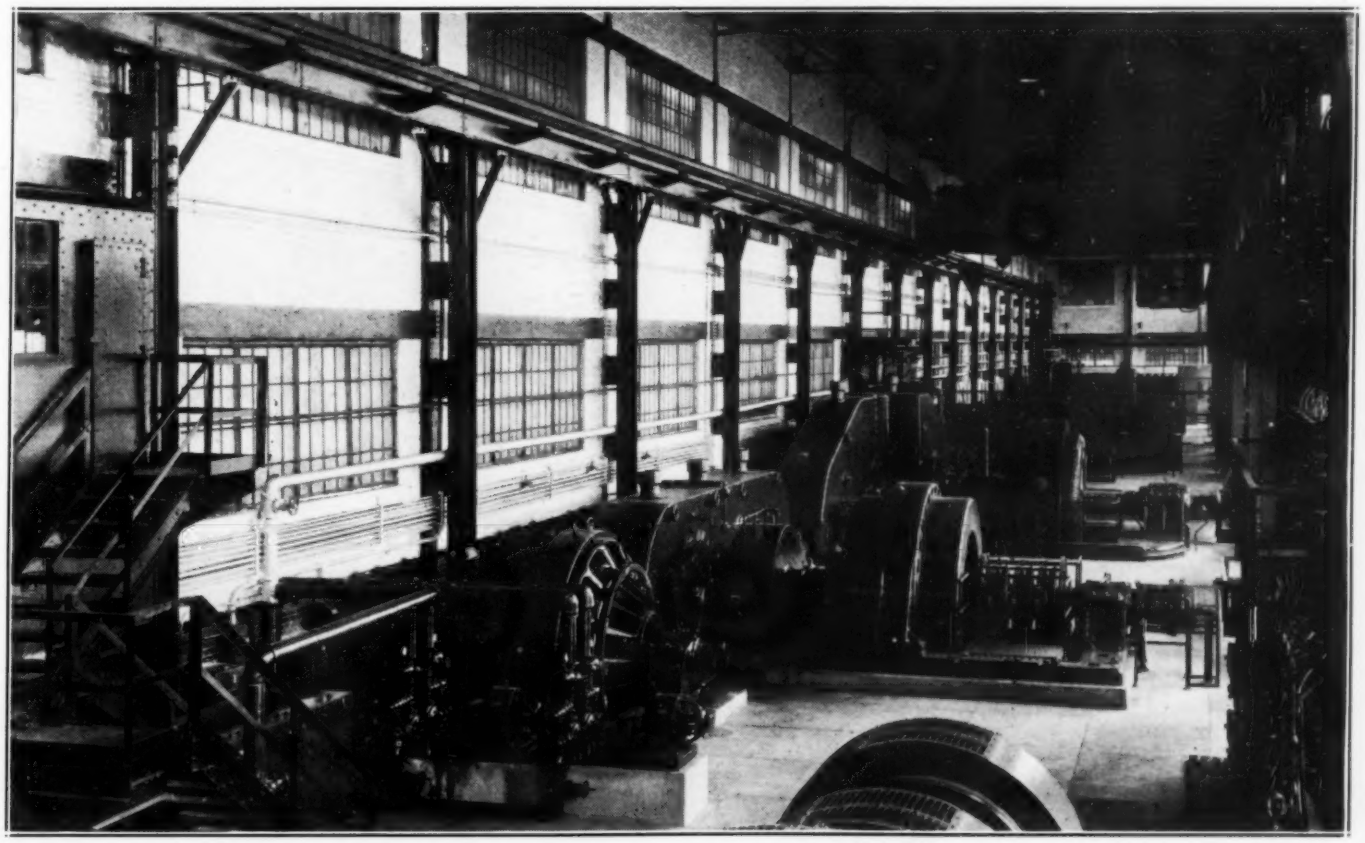


FIG. 1.—General view of the motor room of the Continuous Skelp and Sheet Bar Mill of The Bethlehem Steel Company at Sparrows Point, Md.

Scherbius speed regulation. The last stand which is four high and equipped with roller bearings is driven by a 2600 HP, 600 volt d.c. motor.

Three edging mills, one driven by a 250 HP, 250 volt d.c. motor, and two by 150 HP, 250 volt d.c. motors are interposed in the roll train.

The skelp or sheet bar as it leaves the last stand is cut by electrically driven rotary shears.

Two features that mark this mill as deviating from previous practice was the use of synchronous motors on the first two drives and the selection of an electrically driven rotary shear to cut the product. During the preliminary layout of this mill it developed that slow speed motors of very large size would be required. With the present power system carrying a number of large induction motors intermittently loaded, the low power factor at times was interfering with voltage regulation and was drawing complaints from the power company. Synchronous motors were mentioned as possible drives, but throughout the United States prior to 1925, only five motors totaling 3450 HP had been installed on main roll drives and none of these on continuous mills of this size. However, since then, installations have been as follows: In 1925, thirteen motors totaling 19,100 HP, in 1926—three motors totaling 12,000 HP, in 1927—twenty one motors totaling 27,900 HP and so far in 1928, eight motors of 11,750 HP.

Data presented in the writer's paper on the application of synchronous motors to mill drives appearing in the May, 1925, issue of the Iron & Steel Engineer showing the torque required to start a six stand continuous mill was the basis on which synchronous motors were applied to this mill. The Korndorfer method of starting is used. The operation of these units since the mill went into operation in July, 1927, has not differed in any way from a wound rotor induction motor. No trouble of any kind has been experienced and the surge or starting peak expected of synchronous equipment of this size has failed to materialize.

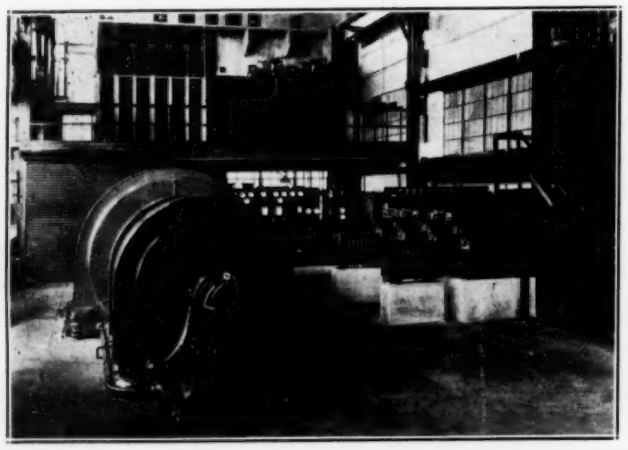


FIG. 2.—Part view of the motor room of the continuous skelp and sheet bar mill of the Bethlehem Steel Company, Sparrows Point, Md.

Torque and k.v.a. input curves on these motors are presented in a paper by Mr. W. T. Berkshire and H. A. Winne on Synchronous motors for driving mills appearing in December, 1927, issue of Blast Furnace and Steel Plant.

An unique feature of this installation is the method of tying together the Scherbius regulating machines for the 6700 HP induction motor and the direct current generator which supplies power to the 2600 HP finishing stand motor. This is accomplished by a motor generator consisting of five units, namely, the two regulating machines (R1) and (R2) a synchronous motor (S), a direct current generator (G) (for the 2600 HP d.c. motor) and an exciter (E). The latter provides the necessary 250 volt excitation for synchronous motor (S) and the generator (G) the 2600 HP motor, and the 4000 and 6500 HP synchronous motors on the roughing and finishing stands. The synchronous speed of the 6700 HP induction motor is 375 RPM with speed adjustment above synchronism to 500 RPM and below synchronism to 250 RPM. When running below synchronism the slip energy from this motor passes to the regulating machines (R1) and (R2) and these machines acting as motors assist the synchronous motor (S) in driving the direct current generator (G).

If (G) were not supplying power to the finishing stand motor, the slip energy would be returned as electric power to the incoming line through the synchronous motor (S). However, when the finishing stand motor is loaded, the slip energy is available to drive this machine wholly or in part by supplying the driving power for generator (G). If the induction motor is required to run at speeds above synchronism the regulating machines (R1 and R2) act as generators and the synchronous motor (S) draws from the incoming power line the energy which these machines and the direct current generator and exciter require.

FIG. 3.—Rotary Sheet Bar and Skelp Shears.

The Mesta rotary shears used to cut the skelp and sheet bar rolled by this mill are driven by two 190 HP General Electric MDS-418, 600/900 RPM, 300 volt motors which operate in series on 600 volt supply from the generator (G) used to drive the 2600 HP d.c. motor. The variable speed motor driving the table connecting the mill to the shear and the pinch roll in front of the shear are also connected to this same generator so that as the voltage on this generator is adjusted there is a direct relation in speed between Drive D, the shear approach table, the top pinch roll, and the shear itself.

Those familiar with steam flying shear operation know that draft after draft of sheet bars are cut with less than an inch variation in lengths by the simple method of having a flag switch trip the shear.

The rotary shears consist of two cylinders geared together on which are attached blades that mesh say on every third revolution of one cylinder and fourth revolution of the other.

Assuming that the steel and shear both run at constant speeds the bars will be cut in exact multiples. However, the speed of the steel will vary and the Electrical conditions will cause variations in motor speeds so that the two must be synchronized.

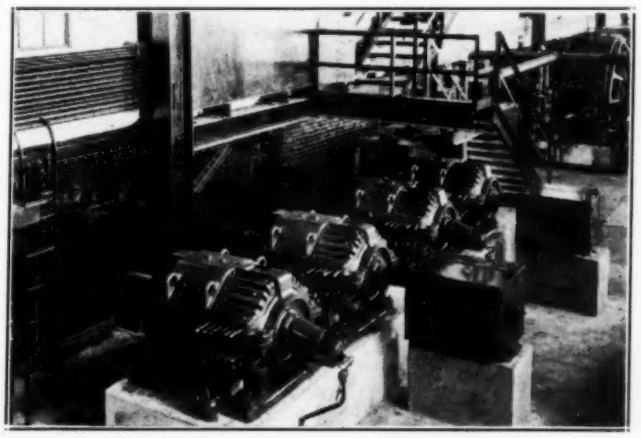


FIG. 4.—Direct Current motors driving the Two Mesta rotary shears.

The top pinch roll is used to measure the speed of the steel. This roll is driven at ten per cent plus or minus of the speed of the steel by a motor operating on permanent resistance. The steel passing under this roller will then transmit its speed to the roller. Direct connected to this drive is a single phase generator which furnishes power for the automatic dynamometer regulators geared to the motors. The function of this regulator is to vary the motor fields so that for any particular multiple in length the speed of the shears will vary directly as the speed of the steel.

FIG. 5.—600 Volt Direct Current Motors and Three unit 4500 KVA Synchronous Motor Generators in motor room.

The 12" Skelp Mill is located adjacent to the bar and billet yards of the two continuous mills and rolls skelp for pipe sizes ranging from ¼" to 3". This Morgan mill is driven by four Westinghouse d.c motors. An 1800 HP, 525/275 RPM motor drives the first four stands. Another motor of the same size and speed the next two stands a 1100 HP, 320/214 RPM—the next stand and another 1100 HP, 382/246 RPM, the last stand. One Edging mill is geared to the second drive and another is driven by a 150 d.c. 250 volt motor.

Power for the main motors is obtained from a 6100 HP 6600 volt synchronous motor driven two generator set. Generator field control is used and so arranged that when the motors are once adjusted, for the required speeds, they can be shut down and on starting will automatically return to the proper speed.

The Pipe Mills consist of five units built side by side flanked on one end by a skelp storage building and on the other by a pipe warehouse.

The first unit contains the ¼ x 2", and the 1½"-3" Butt-weld pipe mills. The second unit houses the galvanizing department and the machine shop. The third unit will be used for a coupling shop. The fourth unit contains the 2-8" lapweld mill. The fifth building contains the 6-16" mill. Manufacture of buttweld pipe started in October, 1927, and lapweld pipe in January, 1928.

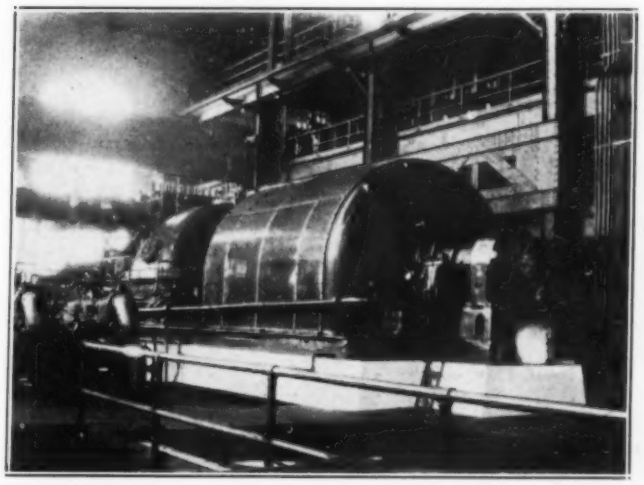


FIG. 6.—20,000 KW, 200 deg. F., 250 lbs. pressure Turbine.

The electrical equipment in the Pipe Mills consists of over 500 motors totalling 6500 HP. Most of these motors are comparatively small and the majority are equipped with ball or roller bearings. Converting equipment consists of an Allis Chalmers 1000 k.w. MG set, a 3000 kva. bank of 6600/550 volt transformers and several single phase lighting and electric furnace transformers. The direct current power is distributed through Westinghouse automatic high speed reclosing circuit breaker panels.

High speed automatic circuit breaker operation in the Wire and Pipe Mill is considered a large factor in the low motor maintenance experienced in these plants.

The 20,000 k.w. 200 deg. F. 250 lb. turbine is of the General Electric Company manufacture and is served by a 33,000 sq. ft. surface condenser manufactured by our Moore plant. Steam is bled at the ninth stage at 14 lbs. absolute for feed water heating.

The original boiler plant consisting of 3—1291 HP boilers has been increased by two more 1291 HP boilers and two 150,000 lbs. steam generators. The old boilers have steam driven auxiliaries but the new boilers have electrically driven induced, forced and primary air fans, coal feeders, boiler feed pumps, etc. Smoot Combustion control is used.

The electrical equipment on the new blast furnace consists of a two motor skip hoist operated from a 160 k.w. motor generator set by Ward Leonard control. The hoist motors are 150 HP shunt wound 250 volt motors. This furnace is equipped

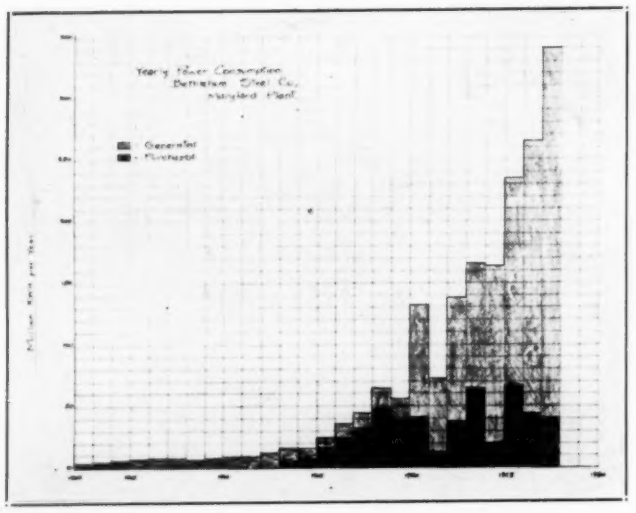


FIG. 7.—Yearly Power Consumption, Bethlehem Steel Co., Maryland Plant.

with a Kneeland top, the bell is operated by a mechanism driven by a 50 HP mill type motor while the slide mechanism is motored by a 25 HP motor. This skip hoist, bell hoist and slide are electrically interlocked and operated automatically by a sequence switch set for the desired charges.

Automatic stock indication is provided by the McKee recorder.

Eight 650 HP fire tube, marine type waste heat boilers have been recently applied to open hearth furnaces and have been motored by 100/25 HP 500/300 RPM 550 volt a.c. series type brush shifting adjustable speed motors. With a new furnace the suction is somewhat less than that required near the end of the furnace life so that greater efficiency is secured by adjustable speed a.c. motors of this voltage than by either the use of d.c. motors or damper control.

Among the many interesting things from an electrical viewpoint installed during the past two years which merit mention are: an electric brass furnace, electric tool and die tempering furnaces in the Pipe Mill, automatic electric welding heads, several third rail motor cars for roll, scrap and slab transfer, the installation of mill motors with roller bearings and general purpose motors with ball bearings.

The following tabulation shows the approximate motorization represented in the additions.

	Number	Horsepower
Tin Mill	143	6,986
Sheet Mill	50	2,110
27-24-21" Mill	65	26,278
12" Skelp Mill	52	8,064
Pipe Mill	519	6,506
Power Auxiliaries	93	4,490
Coke Ovens	7	264
Blast Furnaces	23	1,287
Open Hearth	75	1,210
Miscellaneous	10	345
Total	1,037	57,540

DISCUSSION

George J. Walz*: Gentlemen: The subject of tonight's paper, The Sparrows Point Plant of The Bethlehem Steel Company, is the plant, which Mr. Schwab announced some years ago he intended to make eventually the greatest Steel Plant in the world, this particular plant having been selected for this ambitious purpose because of its ideal location at tide-water, as well as a number of other natural advantages.

From that time on, a practically continuous program of improvements and additions on an enormous scale has been pursued at this plant, until now some are of the opinion, that Mr. Schwab's lofty ambition has already been realized. Now I am not in a position to draw any comparisons with foreign leading plants, that is, plants in other countries but this I do know, that Sparrows Point is one of the finest and most modern steel plants in existence anywhere today.

Mr. Schnure, in his usual characteristic, direct, snappy manner, has covered a very large part indeed of the subject in which, as I said before, we, as an Association are most intensely interested. I must also commend him on the liberal manner in which he has used slides tonight. In fact, I cannot recall ever having heard a paper which was as easy to assimilate as this one. All one had to do was to sit back, look at the continuous flow of pictures and absorb the interesting talk. These slides have brought out some particularly interesting features. One is the enormous size of some of the units, especially those operating the main roll drives in the mills. Another feature is the complexity of the electric wiring of some of these drives, such as the continuous skelp mill.

L. A. Umansky†: The excellent paper which Mr. Schnure has just read certainly deserves numerous comments and it would be rather interesting to discuss some of the points which were brought up. However, the kind invitation of our Chairman leaves me no other choice but to take a few minutes of your time and to sketch briefly certain impressions which I have received while visiting a number of European steel mills during the latter part of 1927.

Let us, first of all, get a conception of the relative size of the steel industries on either side of the Atlantic. In round figures, Germany, France, Belgium and England, all put together, produced in 1927 as much as 75% of the steel made in this country during the same period of time. This total ingot capacity is split among a much larger number

*Asst. Elec. Supt., Bethlehem Steel Co., Steelton, Pa.
†Elec. Engr., General Electric Co., Schenectady, N. Y.

of plants than is the case in the U. S. A. Naturally, the average production per plant is much lower in Europe. But it would be entirely wrong to assume that for this reason the electrical equipment used in European steel mills is necessarily smaller in capacity than that used in our plants.

Let us take, for instance, the question of reversing drives. Much as we are proud, and rightly so, of our recent developments in this line, we have yet to build a drive exceeding in maximum rating a few equipments running in Europe. For instance, an English plate mill is driven by a reversing motor which is capable of developing a maximum emergency torque of approximately 3,000,000 ft. lb. at 35 r.p.m.; the two largest American reversing motors, each driving a 54" blooming mill, are capable of developing a maximum torque of about 2,500,000 lb. ft. at 40 r.p.m. This is not the only example and there are several other European blooming mill drives which fully compare in capacity with their American counterparts. We well know that, within certain wide limits, the size of a reversing mill depends primarily on the product rolled, and not so much on the tonnage.

But, it would be a further mistake to assume that the European reversing mill equipments are not capable of rolling, if necessary, large tonnages. There is one 45" reversing blooming mill in Germany which is said to have attained a monthly record of over 100,000 tons of ingots rolled. Thus, this mill fully stands comparison even with such record-producing mills like the ones which Mr. Schnure has at his plant. These examples alone prove that the parallel study of European and American equipments is both interesting and instructive.

It is true that the reversing mills are occupying an exclusive place in European steel industries, even at the expense of other types of mills. This is something which is perfectly justified from the operating standpoint. If you have to roll a large variety of products like blooms, billetts, sheet bars, etc., with a relatively small aggregate monthly tonnage, you would naturally wish to do this with a minimum of equipment and with the greatest ease in changing quickly from order to order; nothing can equal a reversing mill in this respect. This is exactly why this type of mill occupies such an exclusive place in Europe. The highest degree of skill of steel mill electrical engineers seems to have been concentrated on developing reversing drives.

On the other hand, the continuous mills, without which our steel plants are unthinkable, are an exception rather than the rule on the other side. Such latest developments in American rolling mill practice, like continuous mills with individually driven tandem stands, are practically unknown in Europe.

But if I had to pick out one single point on which the electrical apparatus on either side differs most strikingly from each other, it certainly would be the control equipment. It is in this respect that we are several years ahead of European engineering; in making this statement I am entirely free from any desire to "boost our own stock." It is not uncommon to see, say, a blooming mill pulpit where the several auxiliaries are controlled with huge drum controllers instead of the conventional American magnetic control. The net result of it is, of course, that five or six men are employed while two men do a similar work in this country. The conventional arguments of cheap labor, etc., are brought in to justify the manual control, but these arguments carry weight only to a very limited extent. We know from our own experience that the greatest advantage of magnetic control is not the resultant reduction of labor, but the protection given to the electrical apparatus and, therefore, a great reduction in maintenance costs.

This fact and a few closer observations make me reasonably certain that Europe will soon be trying to catch up with us in development of control gear; in fact, a good deal has already been done in this line in France and England. While the work in these countries is being done on a more modest scale than here, an observer can already find a number of new and original ideas.

If we leave for a moment the electrical branch of engineering and glance at what has been done in other branches of this art in European steel mills, we will find, for instance, that the continental combustion engineers are great masters not only in "chasing BTU's" but in catching them as well. While we are gradually discarding the use of gas engines for generating power from blast furnace gas and are improving the heat balance by use of efficient steam turbines, the continental engineers are still employing and are trying to continuously improve their gas engines. Units up to 7000 H.P. are in use. Exhaust gas from these engines is used under boilers to generate an additional amount of energy; this process is said to increase the energy obtainable from a given amount of blast furnace gas by as much as 15%. As far as I know, this is something which has never been done in this country although we still have a number of steel mill power plants with gas engine driven generators.

I am very far from pretending that my sketchy remarks have covered the ground in any comprehensive way. The comparison between the European and American steel mills from the standpoint of application of electricity is too vast a problem to be covered in the few minutes which we have at our disposal tonight.

But, there is one strong impression which I got during my trip and which I want to convey to you: The engineers on either side, sometimes working in contact with each other, but mostly independently, have found in many cases different solutions for identical problems. I have found that each side may well profit by the study of what the other side has done. It is true that the principal differences are in details, but we well know that the details are the things which, put together, comprise the bulk of engineering.

C. M. Thompson, Jr.*: I haven't anything to add to the discussion, but there is one question I would like to ask Mr. Schnure: What is the function of the two motors in series on the shear drive?

F. O. Schnure: As the steel comes down the table, it is running about 600 feet per minute. The idea of having two motors in series is to start the shear and bring it up to full running speed from the time the steel leaves the last stand until it

*Plant Engr., Henry Disston & Sons, Tacony, Philadelphia, Pa.

reaches the shear. This distance is about fifty feet. Two motors in series will produce sufficient torque to quickly overcome the inertia of the shear in the short time available. After the piece is cut the shear is shut down and stopped at a predetermined point by limit switches, so that when steel again comes along, the shear starts just in time to crop off two feet of the bar and cut in multiples thereafter.

George J. Walz: There is another thing about the last slide Mr. Schnure showed that appears very striking to me and that is the terrific rate, at which the electrical power consumption of his plant is increasing. There absolutely isn't going to be any limit to this from the looks of that last curve of his.

Judging from the amount of equipment that these slides have shown you tonight, you can readily see that Mr. Schnure is a mighty busy man in the case of his particular plant; he is a far busier man than the average electrical engineer at the head of an electrical department, who merely has to operate and maintain the electrical equipment in his steel plant, for he also has to take care of these wonderful improvements which they are putting in at Sparrows Point, so for him to come here and give us a paper like he has done, you can realize entails a lot of sacrifice in the way of time and effort.

On that account we ought to feel particularly grateful to Mr. Schnure and I therefore wish to thank him most sincerely both personally and in behalf of the Philadelphia Section of the A. I. & S. E. E. for what he has done for us tonight.

MAIN DRIVE MOTORS 1928

Companies	Total HP purchased 1928
U. S. Steel Corporation	46250
Bethlehem Steel Corporation	1000
Youngstown Sheet & Tube Co.	19000
Jones & Laughlin Steel Corp.	4500
Wheeling Steel Corporation	29250
Aluminum Co. of America	5500
Columbia Steel Company	13300
Timken Roller Bearing Co.	10100
Sharon Steel Hoop Co.	12000
John A. Roeblings Sons Co.	6700
Interstate Iron and Steel Co.	2500
Gulf States Steel Co.	12200
Sheffield Steel Corporation	6300
Superior Steel Corp.	6800
Danville Structural Steel Co.	6000
Bourne Fuller Co.	1000
Pittsburgh Steel Co.	3950
Steel Company of Canada	3700
Globe Steel Tube Co.	2600
West Virginia Rail Co.	2100
All Other	17550
Total	212,300

Total Motors Purchased In Iron & Steel Industry	HP Per Motor
9	300
8	350
22	400
3	450
20	500
18	600
1	700
5	750
13	800
1	900
10	1000
8	1200
6	1250
1	1300
11	1500
1	1650
2	1750
3	1800
7	2000
1	2100
1	2300
3	2500
1	2750
4	3000
1	3500
1	4000
1	4500
5	5000
1	6000
3	7000
Total 171	

Electricity's Contribution To The Iron & Steel Industry

Main Roll Drives in the United States and Canada

With this issue of the Iron and Steel Engineer we are again publishing a tabulated list of main roll drives installed in the Iron and Steel Industry as of December 31st, 1928.

In the past this information has been published in cataloged forms by the different manufacturing companies, each catalog including only those installations involving their own equipment. It has always been difficult for the electrical engineer in the steel industry to properly analyze the information included in these various publications because of the wide differences in the method of tabulation used by the various manufacturers.

In this tabulation the Iron and Steel Engineer is presenting the information in a uniform manner showing the Horse Power, R.P.M., Voltage, Cycles, Type and Size of mill, Method of drive, date of purchase, name of plant and location. Also a classified list which gives the types of installations in Blooming Mills, Plate Mills, Rail and Structural Mills, Bar and Billet Mills, Sheet Bar and Skelp Mills, Sheet and Tin Plate Plants, Rod Mills, Piercing Mills, Tube Mills, Strip and Hoop Mills, Merchant Mills, Wire Mills, Wheel Mills, Aluminum Brass, Copper and Non-Ferrous Mills; also the Multi-Speed Drives, A.C. Speed sets, Direct Current Adjustable Speed Drives and Reversing Blooming Mill Drives are tabulated.

This data has been prepared with the view of providing the Executives, and Engineers in the Iron and Steel Industry an authority, and a reference manual for their guidance in future installations and extensions.

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1	300	175-300	230	d.c.	Tube Mill	Direct	1927	Babcock & Wilcox.	Beaver Falls, Pa.	W
2	300	175-300	230	d.c.	Tube Mill	Direct	1927	Babcock & Wilcox.	Beaver Falls, Pa.	W
3	300	175-225	600	d.c.	10" Merchant Mill	Direct	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
4	300-300	187.5-112.5	2200	25	12" Merchant Mill	Direct	1914	Bethlehem Steel Co.	Lebanon, Pa.	GE
5	300	225-450	230	d.c.	Merchant Mill	Direct	1928	Barton Spider Web. Co.	Chicago, Ill.	W
6	300	250	440	25	Sheet Mill	Geared	1910	Simonds Mfg. Co.	Lockport, N. Y.	GE
7	300	250	440	25	Cogging Mill	Geared	1910	Simonds Mfg. Co.	Lockport, N .Y.	GE
8	300	250-750	250	d.c.	12" Hoop Mill	Geared	1928	Carnegie Steel Co.	Youngstown, O.	W
9	300	250-750	250	d.c.	10" Merchant Mill	Geared	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
10	300	257	2200	60	Roll		1917	Tennessee Coal, Iron & R. R. Co.	Bessemer, Ala.	CW
11	300	267-800	230	d.c.	Hot Merchant Mill	Geared	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
12	300	267-800	230	d.c.	Hot Merchant Mill	Geared	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
13	300	267-800	230	d.c.	Hot Merchant Mill	Geared	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
14	300	290	2200	25	Brass Mill	Geared	1920	American Brass Co.	Buffalo, N. Y.	W
15	300	290	2200	25	Brass Mill	Geared	1920	American Brass Co.	Buffalo, N. Y.	W
16	300	290	2200	25	Brass Mill	Geared	1920	American Brass Co.	Buffalo, N. Y.	W
17	300	290	2200	25	Brass Mill	Geared	1920	American Brass Co.	Buffalo, N. Y.	W
18	300	300	230	d.c.	Cold Rolling Mill	Geared	1914	Trumbull Steel Co.	Warren, Ohio	W
19	300-300	300-180	2200	25	10" Merchant Mill	Direct	1914	Bethlehem Steel Co.	Lebanon, Pa.	GE
20	300	300	2200	60	Piercing Mill	Coupled	1918	Pittsburgh Steel Products Co.	Allenport, Pa.	CW
21	300	300-600	230	d.c.	20" x 30" Brass Mill	Geared	1920	West Virginia Metal Products Co.	Fairmont, W. Va.	W
22	300	300-600	230	d.c.	20" x 30" Brass Mill	Geared	1920	West Virginia Metal Products Co.	Fairmont, W. Va.	W
23	300	200-600	230	d.c.	22" x 36" Brass Mill	Geared	1920	West Virginia Metal Products Co.	Fairmont, W. Va.	W
24	300	300-600	230	d.c.	22" x 36" Brass Mill	Geared	1920	West Virginia Metal Products Co.	Fairmont, W. Va.	W
25	300	300	230	d.c.	Cold Rolling Mill	Geared	1920	Alan Wood Iron & Steel Co.	Conshohocken, Pa.	W
26	300	300	2200	60	26" Cold Mill	Geared	1921	International Nickel Co.	Huntington, W. Va.	AC
27	300	300	2200	60	Piercing Mill	Coupled	1917	Pittsburgh Steel Products Co.	Monessen, Pa.	CW
28	300	300	2200	60	Roll		1917	Tennessee Coal, Iron & R. R. Co.	Bessemer, Ala.	CW
29	300	300	230	l.c.	Steel Mill	Geared	1925	National Tube Co.	Lorain, Ohio	AC
30	300	300	230	l.c.	Steel Mill	Geared	1925	National Tube Co.	Lorain, Ohio	AC
31	300	300	230	l.c.	Steel Mill	Geared	1925	National Tube Co.	Lorain, Ohio	AC
32	300	300-650	250	d.c.	10" Rod Mill	Direct	1927	Washburn Wire Co.	Phillipsdale, R. I.	W
33	300	300-650	250	d.c.	10" Rod Mill	Direct	1927	Washburn Wire Co.	Phillipsdale, R. I.	W
34	300-300	315-630	230	d.c.	8" Merchant Mill	Direct	1919	Donner Steel Co.	Buffalo, N. Y.	GE
35	300	325-650	220	d.c.	Sheet Mill		1919	Aluminum Co. of America	New Kensington, Pa.	AC
36	300-225-165	435-225-165	6600	25	12" Hot Strip Mill	Geared	1920	Illinois Steel Co.	Gary, Ind.	GE
37	300	340	2200	60	Cold Rolling Mill	Geared	1921	Newton Steel Co.	Newton Falls, Ohio	W
38	300	345-500	500	d.c.	Tube Rolling Mill	Geared	1912	Pittsburgh Steel Prod. Co.	Monessen, Pa.	W
39	300	350	2200	60	Seamless Tube Mill	Geared	1915	Timken Roller Bearing Co.	Canton, Ohio	W
40	300	350	2200	60	Cold Rolling Mill	Geared	1915	Mansfield Sheet & Tin Plate Co.	Mansfield, Ohio	W
41	300	350	2200	60	Tube Rolling Mill	Geared	1919	Timken Roller Bearing Co.	Canton, Ohio	W
42	300	350-450	230	d.c.	Lap Welding Mill	Coupled	1923	Gary Tube Co.	Gary, Ind.	AC
43	300	350-500	230	l.c.	Merchant Mill	Coupled	1915	Buffalo Bolt Co.	N. Tonawanda, N. Y.	CW
44	300	352	2200	60	Cold Roll Mill	Direct	1923	Sharon Steel Hoop Co.	Youngstown, Ohio	W
45	300	353	2200	60	Cold Rolls	Geared	1923	Reeves Mfg. Co.	Dover, Ohio	AC
46	300	360	2200	60	Sheet Mill—Cold Rolls	Geared	1922	U. Alloy Steel Corp., Berger Div.	Canton, Ohio	GE
47	300	360	2300	60	Cold Rolls	Geared	1923	Ashtabula Steel Co.	Ashtabula, Ohio	GE
48	300	360	2200	60	10" Strip Mill	Coupled	1923	Pittsburgh Steel Co	Glassport, Pa.	CW
49	300	363	220	25	Cold Rolling Mill	Geared	1920	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
50	300	365	2200	25	8" Merchant Mill	Direct	1909	Bethlehem Steel Co.	Johnstown, Pa.	W
51	300	375	2200	25	Wire Mill	Geared	1910	Bethlehem Steel Co.	Johnstown, Pa.	GE
52	300	375	2200	25	Wire Mill	Geared	1910	Bethlehem Steel Co.	Johnstown, Pa.	GE
53	300	375	2200	25	Wire Mill	Geared	1910	Bethlehem Steel Co.	Johnstown, Pa.	GE
54	300	375	2200	25	Wire Mill	Geared	1910	Bethlehem Steel Co.	Johnstown, Pa.	GE
55	300	375	2200	25	Wire Mill	Belt	1915	American Steel & Wire Co.	Cleveland, Ohio	GE
56	300	375	2200	25	Wire Mill	Belt	1915	American Steel & Wire Co.	Cleveland, Ohio	GE
57	300	375	2200	25	Wire Mill	Belt	1915	American Steel & Wire Co.	Cleveland, Ohio	GE
58	300	375	2200	25	Wire Mill	Belt	1915	American Steel & Wire Co.	Cleveland, Ohio	GE
59	300	375	2200	25	Wire Mill	Belt	1915	American Steel & Wire Co.	Cleveland, Ohio	GE
60	300	375	2200	25	10" Bar Mill	Geared	1919	Hammond Steel Co.	Solvay, N. Y.	GE
61	300	375	2200	25		Rope		Bethlehem Steel Co.	Johnstown, Pa.	AC
62	300	375	2200	25		Rope		Bethlehem Steel Co.	Johnstown, Pa.	AC

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
63	300	375	2200	25	Bar Mill	Coupled		Bethlehem Steel Co.	Johnstown, Pa.	AC
64	300	375	2200	25	10″ Rod Mill	Direct	1926	U. S. Aluminum Co.	Massena, N. Y.	GE
65	300	375	2200	25	10″ Rod Mill	Direct	1926	U. S. Aluminum Co.	Massena, N. Y.	GE
66	300	400-800	550	60	14″ Bar Mill	Geared	1926	Ludlum Steel Co.	Watervliet, N. Y.	GE
67	300-300	400-800	230	d.c.	Cold Strip Mill	Geared	1913	Weirton Steel Co.	Weirton, W. Va.	GE
68	300-300	400-800	230	d.c.	Cold Strip Mill	Geared	1913	Weirton Steel Co.	Weirton, W. Va.	GE
69	300-300	400	230	d.c.	Cold Strip Mill	Geared	1913	Weirton Steel Co.	Weirton, W. Va.	GE
70	300-300	400-800	230	d.c.	Cold Strip Mill	Geared	1913	Weirton Steel Co.	Weirton, W. Va.	GE
71	300-300	400-800	230	d.c.	20″ x 24″ Cold Strip Mill	Geared	1919	Trumbull Steel Co.	Warren, Ohio	GE
72	300-300	400-800	230	d.c.	20″ x 24″ Cold Strip Mill	Geared	1919	Trumbull Steel Co.	Warren, Ohio	GE
73	300-300	400-800	230	d.c.	20″ x 24″ Cold Strip Mill	Geared	1919	Trumbull Steel Co.	Warren, Ohio	GE
74	300-300	400-800	230	d.c.	20″ x 24″ Cold Strip Mill	Geared	1919	Trumbull Steel Co.	Warren, Ohio	GE
75	300	400-800	230	d.c.	Edging Rolls	Geared	1926	Trumbull Steel Co.	Warren, Ohio	GE
76	300-400	400-800	230	d.c.	14″-4-High Tandem copper Mill	Geared	1927	Rome Brass & Copper Co.	Rome, N. Y.	GE
77	300	435	2200	60	18″ Copper Mill	Geared	1920	West Virginia Metal Products Co.	Fairmont, W. Va.	W
78	300	435	2200	60	24″ x 48″ Copper Mill	Geared	1920	West Virginia Metal Products Co.	Fairmont, W. Va.	W
79	300	435	230	d.c.	12″ Pipe Mill	Coupled	1910	A. M. Byers Co.	Pittsburgh, Pa.	CW
80	300	435	230	d.c.	12″ Pipe Mill	Coupled	1910	A. M. Byers Co.	Pittsburgh, Pa.	CW
81	300	440	2200	60	Roughing Mill	Coupled	1919	Ft. Wayne Rolling Mill Co.	Ft. Wayne, Ind.	AC
82	300	440	2200	60	Cold Roll Mill	Geared	1924	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
83	300	440	2200	60	Cold Roll Mill	Geared	1924	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
84	300	450	440	60	Wire Mill	Geared	1914	American Steel & Wire Co.	Joliet, Ill.	AC
85	300	450	440	60	Wire Mill		1914	American Steel & Wire Co.	Joliet, Ill.	AC
86	300	450-750	230	d.c.	Wheel Mill	Geared	1913	Bethlehem Steel Co.	Johnstown, Pa.	AC
87	300	450-750	230	d.c.	Wheel Mill	Geared	1913	Bethlehem Steel Co.	Johnstown, Pa.	AC
88	300	450	230	d.c.	Merchant Bar Mill	Geared	1916	Carbon Steel Co.	Pittsburgh, Pa.	W
89	300	450	2200	60	8″ Merchant Mill		1917	Columbia Steel Corp.	Los Angeles, Cal.	GE
90	300	450	550	60	Bar Mill	Coupled	1921	National Conduit & Cable Co.	Hast. on Hudson,N.Y	AC
91	300	450	220	30	Lap Welding Rolls	Geared	1923	Spang Chalfant Co.	Etna, Pa.	GE
92	300	450	2200	60	Cross Rolls in Tube Mill	Geared	1924	Standard Seamless Tube Co.	Economy, Pa.	GE
93	300	450	2200	60	Cross Rolls in Tube Mill	Geared	1924	Standard Seamless Tube Co.	Economy, Pa.	GE
94	300	450	440	60	Copper & Brass Rolling Mill	Geared	1927	New Haven Copper Co.	Seymour, Conn.	EM
95	300	485	2200	25	Cold Rolling Mill	Direct	1916	Halcomb Steel Co.	Syracuse, N. Y	W
96	300-300	500-300	2200	25	9″ Merchant Mill	Direct	1914	Bethlehem Steel Co.	Lebanon, Pa.	GE
97	300-300	500-300	2200	25	8″ Merchant Mill	Direct	1914	Bethlehem Steel Co.	Lebanon, Pa.	GE
98	300	500	220	25	Tube Mill	Geared	1915	Republic Iron & Steel Co.	Youngstown, Ohio	GE
99	300	500	2080	25	9″ Merchant Mill	Geared	1916	Halcomb Steel Co.	Syracuse, N. Y.	GE
100	300	500	550	25	Tube Mill	Geared	1917	Baltimore Tube Co.	Baltimore, Md.	W
101	300	500	230	d.c.	Welding Rolls, pipe mill	Geared	1925	Central Tube Co.	Economy, Pa.	GE
102	300	500	550	25	Tube Mill	Geared	1917	Baltimore Tube Co.	Baltimore, Md.	W
103	300	500	220	25		Geared	1917	Republic Iron & Steel Co.	Youngstown, Ohio	GE
104	300	500		60	Brass Mill	Coupled	1917	British American Metals Co.	Plainfield, N. J.	CW
105	300	500	220	25	Slitting Mill	Geared	1928	Kalman Steel Co.	Blasdell, N. Y.	GE
106	300	505	2200	60	20″ Sheet Strip Jobbing Mill	Geared	1926	Indiana Rolling Mill Co.	New Castle, Ind.	W
107	300	505	2200	60	20″ Sheet Strip Jobbing Mill	Geared	1926	Indiana Rolling Mill Co.	New Castle, Ind.	W
108	300	514	440	60	Tube Mill	Geared	1914	Detroit Seamless Tube Co.	Detroit, Mich.	GE
109	300	514	220	60	Tube Mill	Geared	1914	Detroit Seamless Tube Co.	Detroit, Mich.	GE
110	300	514	440	60	Brass Mill	Geared	1915	Chase Metal Works	Waterbury, Conn.	GE
111	300	514	2200	60	Bar Mill	Geared	1915	C. G. Hussey	Pittsburgh, Pa.	AC
112	300	514	220	60	Tube Mill	Geared	1918	Detroit Seamless Tube Co.	Detroit, Mich.	AC
113	300	514	550	60	Brass Sheet Mill	Geared	1919	American Brass Co.	Hastings, N. Y.	GE
114	300	514	550	60	14″ Cold Strip Mill	Geared	1922	Wallingford Steel Co.	Wallingford, Conn.	GE
115	300	514	440	60	Copper & Brass Rolling Mill	Geared	1924	Dallas Brass & Copper Co.	Chicago, Ill.	EM
116	300	514	440	60	Copper & Brass Rolling Mill	Geared	1924	Dallas Brass & Copper Co.	Chicago, Ill.	EM
117	300	514	440	60	Copper & Brass Rolling Mill	Geared	1924	Dallas Brass & Copper Co.	Chicago, Ill.	EM
118	300	514	440	60	Copper & Brass Rolling Mill	Geared	1928	Dallas Brass & Copper Co.	Chicago, Ill.	EM
119	300	575	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
120	300	575	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
121	300	575	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
122	300	575	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
123	300	575	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
124	300	575	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
125	300	575	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
126	300	575	2200	60	Cold Rolling Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
127	300	575	2200	60	Cold Rolling Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
128	300	575	2200	60	Cold Rolling Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
129	300	575	2200	60	Cold Rolling Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky	W
130	300	575	2200	60	Rod Mill	Geared	1922	Standard Underground Cable Co.	Perth Amboy, N. J.	W
131	300	585	440	60	18″ Copper Mill	Chain	1916	Standard Underground Cable Co.	Perth Amboy, N. J.	W
132	300-150	590-292	2200	60	9″ Merchant (Fin.) Mill	Geared	1920	Cleveland Hardware Co.	Cleveland, Ohio	W
133	300	600	2200	60	Brass Mill	Geared	1915	Chase Metal Works	Waterbury, Conn.	GE
134	300	600	2200	60	14″ Mill		1915	Cleveland Brass & Copper Co.	Cleveland, Ohio	AC
135	300	600	2200	60	18″ Mill		1915	Cleveland Brass & Copper Co.	Cleveland, Ohio	AC
136	300-300-150	600-400-300	440	60	Bar Mill	Chain	1916	Vulcan Crucible Steel Co.	Aliquippa, Pa.	GE
137	300	600	2300	60	12″ Billet Mill	Geared	1916	Tennessee Coal, Iron & R. R. Co.	Bessemer, Ala.	GE
138	300	600	2200	60	Merchant Mill	Geared	1916	Tennessee Coal, Iron & R. R. Co.	Bessemer, Ala.	GE
139	300	600	2300	60	Wire Mill	Geared	1917	American Steel & Wire Co.	Waukegan, Ill.	GE
140	300	600	440	60	Brass Mill	Geared	1919	Bristol Brass Co.	Bristol, Conn.	GE
141	300	600	2200	60	10″ Hot Strip Mill	Direct	1919	Superior Steel Co.	Carnegie, Pa.	GE
142	300	600	440	60	Brass Mill		1920	Detroit Copper & Brass Co.	Detroit, Mich.	AC
143	300	600	440	60			1920	Detroit Copper & Brass Co.	Detroit, Mich.	AC
144	300	600	440	60			1920	Detroit Copper & Brass Co.	Detroit, Mich.	AC
145	300	600	2200	60	Tube Mill	Geared	1922	Weldless Tube Co.	Wooster, Ohio	GE
146	300	600	2200	60	Tube Mill	Geared	1922	Weldless Tube Co.	Wooster, Ohio	GE
147	300	600	2200	60	Cold Sheet Mill Rolls	Geared	1923	Falcon Steel Co.	Niles, Ohio	GE
148	300	600	550	60		Geared		National Conduit & Cable Co.	Hast. on Hudson,N.Y	AC
149	300	600	550	60		Geared		National Conduit & Cable Co.	Hast. on Hudson,N.Y	AC
150	300	600	440	60	Copper Strip Mill	Geared	1925	Detroit Copper & Brass Co.	Detroit, Mich.	CW
151	300	720	440	60	14″ Merchant Mill	Geared	1913	Union Rolling Mills Co.	Cleveland, Ohio	GE
152	300	720	2200	60	Wire Rod Mill	Geared	1917	Rome Wire Co.	Rome, N. Y.	AC
153	300	720	440	60	12″ Merchant Mill	Geared	1919	The Stanley Works	New Britain, Conn.	GE
154	300	720	440	60	Bar Mill	Geared	1920	Hoskins Mfg. Co.	Detroit, Mich.	AC
155	300	720	4150	60	Piercing Mill	Geared	1927	Public Service Prod. Co.	Plainfield, N. J.	GE
156	300	750	3000	50	Merchant Mill	Geared	1923	Cons. Rolling Mills Co.	Mexico City, Mex.	GE
157	300	750	2200	25	10″ Bar Mill	Geared	1923	Bethlehem Steel Co.	Lebanon, Pa.	GE
158	300-200	920-360	220	d.c.	Merchant Mill	Direct	1919	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
159	320	400-800	230	d.c.	Cold Strip Drive	Geared	1926	International Nickle Co.	Huntington, W. Va.	AC
160	325	360	2200	60	Bar Mill	Geared	1915	Heppenstall Forge & Knife Co.	Pittsburgh, Pa.	GE
161	325	600	2300	60	Wire Mill	Geared	1917	American Steel & Wire Co.	Waukegan, Ill.	GE
162	340	85	230	d.c.	Welding Rolls	Coupled	1906	National Tube Co.	McKeesport, Pa.	CW
163	350	125	6600	25	12″ Bar Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
164	350	145	2200	60	Cold Rolling Mill	Rope	1912	Central Steel Co.	Massillon, Ohio	W
165	350-350	150-100	6600	25	12″ Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd By
166	350	200-300	250	d.c.	9" Merchant Mill	Direct	1919	National Farming Mach. Co., Ltd	Montmagny, P. Q.	W
167	350-350	240-480	240	d.c.	10" Merchant Mill	Direct	1923	LaClede Steel Co.	St. Louis, Mo.	GE
168	350	242	2200	25	Cold Strip Mill	Geared	1922	Otis Steel Co.	Cleveland, Ohio	W
169	350	250	2200	25	10" Rod Mill	Direct	1911	Dillworth Porter Co.	Pittsburgh, Pa.	GE
170	350	250	440	25	Brass Mill	Geared	1921	Harrison Radiator Corp.	Lockport, N. Y.	GE
171	350	250-325	230	d.c.	9" Merchant Mill	Direct	1921	Wayne Steel Co.	Erie, Pa.	W
172	350-350	275-470	375	d.c.	Reversing Copper Mill	Geared	1920	American Brass Co.	Buffalo, N. Y.	GE
173	350-350	275-470	375	d.c.	Reversing Copper Mill	Geared	1920	American Brass Co.	Buffalo, N. Y.	GE
174	350-350	275-470	375	d.c.	Reversing Copper Mill	Geared	1920	American Brass Co.	Kenosha, Wis.	GE
175	350-350	275-470	375	d.c.	Reversing Copper Mill	Geared	1922	Taunton-New Bedford Copper Co.	Taunton, Mass.	GE
176	350	275-550	230	d.c.	Tube Reeling Mill	Geared	1928	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
177	350	275-550	230	d.c.	Tube Reeling Mill	Geared	1928	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
178	350-235	300-200	6600	25	Merchant Mill	Geared	1920	Illinois Steel Co.	Gary, Ind.	GE
179	350	300	230	d.c.	Wire Draw Bench	Coupled	1908	Pittsburgh Steel Co.	Monessen, Pa.	CW
180	350	300	230	d.c.	Wire Draw Bench	Coupled	1908	Pittsburgh Steel Co.	Monessen, Pa.	CW
181	350	300	230	d.c.	Wire Draw Bench	Coupled	1908	Pittsburgh Steel Co.	Monessen, Pa.	CW
182	350	300	230	d.c.	Wire Draw Bench	Coupled	1911	Pittsburgh Steel Co.	Monessen, Pa.	CW
183	350	345	440	60	Sheet Mill	Geared	1917	Universal Steel Co.	Bridgeville, Pa.	W
184	350	320	2200	60	21" Plate (Cold Roll.) Mill	Geared	1910	Oliver Iron & Steel Co.	Wilson Station, Pa.	W
185	350	350	2200	60	Seamless Tube Mill	Geared	1927	Timken Roller Bearing Co.	Canton, Ohio	W
186	350-350	360-240	240	d.c.	10" Merchant Mill	Direct	1911	LaClede Steel Co.	St. Louis, Mo.	GE
187	350	360	2200	60	Sheet Mill—Cold Rolls	Geared	1919	Falcon Steel Co.	Niles, Ohio	GE
188	350-350	360-450	230	d.c.	Welding Rolls	Direct	1920	National Tube Co.	Lorain, Ohio	GE
189	350-350	360-450	230	d.c.	Welding Rolls	Direct	1920	National Tube Co.	Lorain, Ohio	GE
190	350-350	360-240	440	60	Bar Mill	Coupled	1921	Simmons Mfg. Co.	Kenosha, Wis.	AC
191	350-350	375-214	6600	25	9" Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
192	350	400	2200	60	Wire Rod Mill	Geared	1918	Taunton-New Bedford Copper Co.	New Bedford, Mass.	AC
193	350	400	2200	60	Wire Rod Mill	Coupled	1918	Taunton-New Bedford Copper Co.	New Bedford, Mass.	AC
194	350	400	2200	60	Wire Rod Mill	Coupled	1918	Taunton-New Bedford Copper Co.	New Bedford, Mass.	AC
195	350	400-600	230	d.c.	Hot Mill	Geared	1913	Bethlehem Steel Co.	Lackawanna, N. Y.	CW
196	350	400-800	230	d.c.	8" Merchant Mill	Direct	1928	Laclede Steel Co.	Alton, Ill.	GE
197	350	420	2200	50	Merchant Mill	Geared	1919	Southern California Iron & Steel Co.	Los Angeles, Cal.	W
198	350	435	2200	60	Pipe Welding Rolls	Geared	1919	Wheeling Steel Corporation	Steubenville, Ohio	W
199	350	450-600	230	d.c.	Band Mill	Direct	1926	Sharon Steel Hoop Co.	Sharon, Pa.	CW
200	350	450	2200	60	Tube Rolling Mill	Geared	1925	Pittsburgh Steel Co.	Allenport, Pa.	EM
201	350	480	2200	25	12" Roughing Mill	Geared	1923	Halcomb Steel Co.	Syracuse, N. Y.	W
202	350	485	2200	25	Cont. Sheet Mill	Geared	1926	American Sheet & Tin Plate Co.	Gary, Ind.	AC
203	350	485	2200	25	Cont. Sheet Mill	Geared	1926	American Sheet & Tin Plate Co.	Gary, Ind.	AC
204	350	490	6400	25	24" Flat Edging Mill	Geared	1916	American Steel & Wire Co.	Cleveland, Ohio	W
205	350	490	2200	25	Brass Mill	Geared	1920	American Brass Co.	Buffalo, N. Y.	W
206	350	490	2200	25	Brass Mill	Geared	1920	American Brass Co.	Buffalo, N. Y.	W
207	350	500	230	d.c.	16" Cont. Skelp Mill	Geared	1924	Gary Tube Co.	Gary, Ind.	AC
208	350	514	2200	60	Tube Mill	Geared	1928	Globe Steel Tube Co.	Milwaukee, Wis.	AC
209	350	514	2200	60	Tube Mill	Geared	1928	Globe Steel Tube Co.	Milwaukee, Wis.	AC
210	350	524-850	230	d.c.	18" Blading Mill	Geared	1924	W. E. & M. Co.	South Phila. Works	W
211	350	580	2200	60	Merchant Mill	Geared	1916	Copper Clad Steel Co.	Pittsburgh, Pa.	W
212	350	590	2200	60	12" Merchant Mill	Geared	1918	Indianapolis & Eastern TractionCo.	Indianapolis, Ind.	W
213	350	600	2200	60	Bar Mill	Belted	1920	Joslyn Mfg. Co.	Chicago, Ill.	AC
214	350	700	2200	60	Merchant Mill	Geared	1918	Kilby Car & Foundry Co.	Anniston, Ala.	W
215	350	720	2200	60	Tube Mill	Geared	1928	Globe Steel Tube Co.	Milwaukee, Wis.	AC
216	350	720	2200	60	Tube Mill	Geared	1928	Globe Steel Tube Co.	Milwaukee, Wis.	AC
217	360	300-425	230	d.c.	8" Rod Mill	Direct	1915	United Alloy Steel Corporation	Canton, Ohio	W
218	360	300-600	230	d.c.	Rod Mill	Direct	1922	United Alloy Steel Corporation	Canton, Ohio	W
219	360	350-500	230	d.c.	7" Rod Mill	Direct	1915	United Alloy Steel Corporation	Canton, Ohio	W
220	375	430-860	230	d.c.	20" Cold Rolling Mill	Geared	1922	Otis Steel Company	Cleveland, Ohio	W
221	375	430-860	230	d.c.	20" Cold Rolling Mill	Geared	1922	Otis Steel Company	Cleveland, Ohio	W
222	375	430-860	230	d.c.	20" Cold Rolling Mill	Geared	1922	Otis Steel Company	Cleveland, Ohio	W
223	375	430-860	230	d.c.	20" Cold Rolling Mill	Geared	1922	Otis Steel Company	Cleveland, Ohio	W
224	375	430-860	230	d.c.	20" Cold Rolling Mill	Geared	1922	Otis Steel Company	Cleveland, Ohio	W
225	375	430-860	230	d.c	Cold Roll Mill	Geared	1925	Otis Steel Co.	Cleveland, Ohio	GE
226	375	430-860	230	d.c.	Cold Roll Mill	Geared	1925	Otis Steel Co.	Cleveland, Ohio	GE
227	400	75		d.c.	Welding Rolls	Coupled	1906	National Tube Co.	McKeesport, Pa.	CW
228	400-400	107- 64	2200	25	16" Bar Mill	Direct	1914	Bethlehem Steel Co.	Lebanon, Pa.	GE
229	400	125	230	d.c.	12" Structural Mill	Direct	1919	Eastern Steel Co.	Pottsville, Pa.	W
230	400	180-540	600	d.c.	Merchant Mill	Direct	1928	American Steel & Wire Co.	Cleveland, O.	W
231	400	200-300	230	d.c.	9" Merchant Mill	Direct	1914	United Alloy Steel Corporation	Canton, Ohio	W
232	400	210-350	230	d.c.	Merchant Mill		1915	Buffalo Bolt Co.	No. Tonawanda, N. Y.	CW
233	400	223-669	600	d.c.	Merchant Mill	Direct	1928	American Steel & Wire Co.	Cleveland, O.	W
234	400	240-721	600	d.c.	9" Merchant Mill	Geared	1926	Illinois Steel Co.	Gary, Ind.	GE
235	400	240-721	600	d.c.	9" Merchant Mill	Geared	1926	Illinois Steel Co.	Gary, Ind.	GE
236	400	240-721	600	d.c.	9" Merchant Mill	Geared	1926	Illinois Steel Co.	Gary, Ind.	GE
237	400	240-721	600	d.c.	9" Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
238	400-400	250-500	230	d.c.	10" Merchant Mill	Direct	1920	Timken Roller Bearing Co.	Canton, Ohio	GE
239	400	250-750	600	d.c.	Merchant Mill	Direct	1928	American Steel & Wire Co.	Cleveland, O.	W
240	400-400	275-500	550	d.c.	12" Hot Strip Mill	Direct	1916	American Steel & Wire Co.	Cleveland, Ohio	GE
241	400	277	2200	60	Copper Rod Mill	Direct	1927	Washburn Wire Co.	Phillipsdale, R. I.	AC
242	400	277	440	60	Chromel Mill	Direct	1928	Hoskins Mfg. Co.	Detroit, Mich.	W
243	400	295-885	600	d.c.	Merchant Mill	Direct	1928	American Steel & Wire Co.	Cleveland, O.	W
244	400	290	2200	60	Cold Rolling Mill	Geared	1916	Youngstown Sheet & Tube Co.	Warren, Ohio	W
245	400	290	2200	60	Cold Rolling Mill	Geared	1917	Liberty Steel Co.	Warren, Ohio	W
246	400	300	2200	25	Merchant Mill	Rope	1909	American Steel & Wire Co.	Cleveland, Ohio	GE
247	400	300	2200	25	Merchant Mill	Rope	1909	American Steel & Wire Co.	Cleveland, Ohio	GE
248	400	300	2200	25	Merchant Mill	Rope	1909	American Steel & Wire Co.	Cleveland, Ohio	GE
249	400	300	2200	25	Merchant Mill	Rope	1909	American Steel & Wire Co.	Cleveland, Ohio	GE
250	400	300	2200	25		Geared	1918	Pittsburgh Steel Co.	Monessen, Pa.	AC
251	400	300	440	60			1918	Witherow Steel Co.	Neville Island, Pa	AC
252	400	300	550	25	Tube Mill	Geared	1927	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
253	400	300	550	25	Tube Mill	Geared	1927	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
254	400	300	440	50	Copper & Brass Rolling Mill	Geared	1927	Dallas Brass & Copper Co.	Chicago, Ill.	EM
255	400	300	440	50	Copper & Brass Rolling Mill	Geared	1927	Dallas Brass & Copper Co.	Chicago, Ill.	EM
256	400	300	440	50	Copper & Brass Rolling Mill	Geared	1928	Dallas Brass & Copper Co.	Chicago, Ill.	EM
257	400	350	230	d.c.	Tube Reeling Drive	Geared	1927	National Tube Co.	Lorain, Ohio	AC
258	400	350	230	d.c.	Tube Reeling Drive	Geared	1927	National Tube Co.	Lorain, Ohio	AC
259	400	350	440	60	9" Copper Finishing Mill	Direct	1916	Standard Underground Cable Co.	Perth Amboy, N. J.	W
260	400	352	2200	60	Copper Rod Mill	Geared	1923	American Brass Company	Kenosha, Wis.	W
261	400	350	2200	60	Cold Roll Mill	Geared	1928	Newton Steel Co.	Newton Falls, O.	W
262	400	350	2200	60	Cold Roll Mill	Geared	1928	Newton Steel Co.	Newton Falls ,O.	W
263	400	350	2200	60	Cold Roll Mill	Geared	1928	Newton Steel Co.	Newton Falls, O.	W
264	400	360	2200	60	Sheet Mill, Cold Rolls	Geared	1916	Mahoning Valley Steel Co.	Niles, Ohio	GE
265	400	360	2200	60	Sheet Mill, Cold Rolls	Geared	1916	Mahoning Valley Steel Co.	Niles, Ohio	GE
266	400	360	2200	60	Brass Mill	Geared	1917	American Brass Co.	Waterbury, Conn.	GE
267	400	360	2200	60	Brass Mill	Geared	1917	American Brass Co.	Waterbury, Conn.	GE
268	400	360	2200	60	Cold Roll Sheet Mill	Geared	1918	Reeves Mfg. Co.	Canal Dover, Ohio	GE
269	400	360	2200	60	Brass Mill	Geared	1921	American Brass Co.	Torrington, Conn.	GE
270	400	360	2200	60	Brass Mill	Geared	1921	American Brass Co.	Torrington, Conn.	GE
271	400	360	440	60	Cold Strip Mill	Geared	1921	American Tube and Stamping Co.	Bridgeport, Conn.	GE
272	400	360	440	60			1921	Detroit Copper & Brass Co.	Detroit, Mich.	AC
273	400	360	2200	60	8" Strip Mill	Coupled	1923	Pittsburgh Steel Co.	Glassport, Pa.	CW

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
274	400	360	2300	50	Sheet Mill, Cold Rolls	Geared	1925	Thomas Sheet Steel Co.	Niles, Ohio	GE
275	400	375	220	25	20" Tube Mill, Wld. Rolls	Geared	1909	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
276	400	375	220	25	Tube Mill, Chill Rolls	Geared	1909	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
277	400	375	2200	25	Wire Drawing Bench	Rope	1915	American Steel & Wire Co.	Cleveland, Ohio	GE
278	400	375	2200	25	Wire Drawing Bench	Rope	1915	American Steel & Wire Co.	Cleveland, Ohio	GE
279	400	375	220	25	Tube Mill, Wld. Rolls	Geared	1917	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
280	400	375	220	25	Tube Mill, Wld. Rolls	Geared	1912	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
281	400	375	220	25	Tube Mill, Wld. Rolls	Geared	1922	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
282	400	385	550	40	22" Puddle Mill	Geared	1917	Cohoes Rolling Mill Co.	Cohoes, N. Y.	W
283	400	400-450	220	d.c.	8" Merchant Mill	Direct	1911	Illinois Steel Co.	Milwaukee, Wis.	W
284	400	400	400	60	Bar Mill	Chain	1918	Latrobe Steel Co.	Latrobe, Pa.	AC
285	400	400	440	60	Lap Welding Rolls	Geared	1923	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	GE
286	400	400	440	60	Lap Welding Rolls	Geared	1923	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	GE
287	400	400-800	230	d.c.	Cold Strip Mill	Geared	1926	Trumbull Steel Co.	Warren, Ohio	GE
288	400	400-800	230	d.c.	Cold Strip Mill	Geared	1927	Trumbull Steel Co.	Warren, Ohio	GE
289	400	400-800	230	d.c.	Cold Strip Mill	Geared	1927	Trumbull Steel Co.	Warren, Ohio	GE
290	400	400-800	230	d.c.	Cold Strip Mill	Geared	1927	Trumbull Steel Co.	Warren, Ohio	GE
291	400	400-800	230	d.c.	Cold Strip Mill	Geared	1927	Central Alloy Steel Co.	Massillon, Ohio	GE
292	400	400-800	230	d.c.	Cold Mill	Geared	1927	American Sheet & Tinplate Co.	McKeesport, Pa.	GE
293	400	400	2200	60	Copper Rod Mill	Direct	1927	Washburn Wire Co.	Phillipsdale, R. I.	AC
294	400	400	2200	50	9" Merchant Mill	Belted	1928	Carpenter Steel Co.	Reading, Pa.	GE
295	400	420-1050	250	d.c.	12" Hoop Mill	Geared	1928	Carnegie Steel Co.	Youngstown, O.	W
296	400	420-1050	250	d.c.	10" Merchant Mill	Geared	1928	Tennessee Coal, Iron & R. R Co.	Fairfield, Ala.	CW
297	400	435	2200	60	Aluminum Mill	Geared	1918	U. S. Aluminum Co.	New Kensington, Pa	W
298	400	435	2200	60	Aluminum Mill	Geared	1918	U. S. Aluminum Co.	New Kensington, Pa.	W
299	400	435	440	60	Pipe Mill	Geared	1918	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	W
300	400	435	2200	60	Aluminum Mill	Geared	1919	U. S. Aluminum Co.	Edgewater, N. J.	W
301	400	440	2200	60	Copper Rod Mill	Geared	1922	American Brass Company	Kenosha, Wis	W
302	400	440	4000	60	Billet Mill	Coupled	1923	Bryden Neverslip Co.	Catasauqua, Pa.	AC
303	400	440	440	60	8" Mill	Chain	1928	Phoenix Horseshoe Co.	Joliet, Ill.	W
304	400	440	440	60	8" Mill	Chain	1928	Phoenix Horseshoe Co.	Joliet, Ill.	W
305	400	440	440	60	8" Mill	Chain	1928	Phoenix Horseshoe Co.	Joliet, Ill.	W
306	400	450	2200	60	Brass Mill	Geared	1917	American Brass Co.	Waterbury, Conn.	GE
307	400	450	2200	60	Bar Mill	Geared	1917	Standard Seamless Tube Co.	Economy, Pa.	AC
308	400	450	550	60		Geared	1918	Pressed Steel Car Co.	McKees Rocks, Pa.	AC
309	400	450	2200	50	Wire Drawing Bench	Geared	1919	Gulf States Steel Co.	Birmingham, Ala.	GE
310	400	450	2200	50	Wire Drawing Bench	Geared	1919	Gulf States Steel Co.	Birmingham, Ala.	GE
311	400	450	440	60	Brass Sheet Mill	Geared	1920	Detroit Copper & Brass Co.	Detroit, Mich.	GE
312	400	450	440	60			1921	Detroit Copper & Brass Co.	Detroit, Mich.	AC
313	400	450	440	60	Sheet Mill	Geared	1924	New Jersey Zinc Co.	Palmerton, Pa.	GE
314	400	450	440	60	Sheet Mill	Geared	1924	New Jersey Zinc Co.	Palmerton, Pa.	GE
315	400	450	2200	60	9" Bar Mill	Geared	1924	Atchison, Topeka & S. F. Ry. Co	Chicago, Ill.	AC
316	400	450	2200	60	12" Bar Mill	Geared	1924	Atchison, Topeka & S. F. Ry. Co	Chicago, Ill.	AC
317	400	480	440	25	Merchant Mill	Geared	1927	Bethlehem Steel Co.	Lackawanna, N. Y.	CW
318	400	485	440	25	9" Merchant Mill	Geared	1916	Hess Steel Corporation	Baltimore, Md.	W
319	400	500-1000	600	d.c.	Strip Mill	Geared	1926	Forged Steel Wheel Co.	Butler, Pa.	AC
320	400	500-1000	600	d.c.	Strip Mill	Geared	1926	Forged Steel Wheel Co.	Butler, Pa.	AC
321	400	500-1000	600	d.c.	Strip Mill	Geared	1926	Forged Steel Wheel Co.	Butler, Pa.	AC
322	400	500-1000	600	d.c.	Strip Mill	Geared	1926	Forged Steel Wheel Co.	Butler, Pa.	AC
323	400	500	6600	25	Tube Sizing Mill	Geared	1927	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
324	400	500	6600	25	Reducing Tube Mill	Geared	1928	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
325	400	500	6600	25	Reducing Tube Mill	Geared	1928	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
326	400	514	2200	60			1918	Cleveland Brass & Copper Co.	Cleveland, Ohio	AC
327	400	514	2200	50	Brass Tubes	Geared	1915	American Brass Company	Waterbury, Conn.	GE
328	400	514	2200	50	Brass Tubes	Geared	1915	American Brass Company	Waterbury, Conn.	GE
329	400	514	2200	50	24" Roughing Mill	Geared	1915	American Brass Company	Kenosha, Wis.	AC
330	400	514	2200	60	20" Flat Mill	Geared	1915	American Brass Company	Kenosha, Wis.	AC
331	400	514	2200	60	18" Bar Mill	Geared	1915	American Brass Company	Kenosha, Wis.	AC
332	400	514	440	60	16" Copper Bar Mill	Geared	1916	Waclark Wire Co.	Elizabeth, N. J.	GE
333	400	514	2200	60	Bar Mill	Geared	1919	Judson Mfg. Co.	Oakland, Calif.	AC
334	400	514	2200	50	Brass Mill	Geared	1922	Western Cartridge Co.	East Alton, Ill.	GE
335	400	514	6600	60			1924	Weirton Steel Co.	Weirton, W. Va.	AC
336	400	514	6600	60			1924	Weirton Steel Co.	Weirton, W. Va.	AC
337	400	514	2200	60	Cold Mill	Geared	1927	American Rolling Mill	Zanesville, Ohio	W
338	400	514	4000	60	Rail Splitter	Direct	1926	Inland Steel Co.	Indiana Harbor, Ind.	GE
339	400	575	2200	60	Cold Rolling Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
340	400	575	2200	60	Cold Rolling Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
341	400	575	2200	60	Cold Rolling Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
342	400	575	2200	60	Cold Rolling Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
343	400	575	440	60	Sheet Cop. Rolling Mill	Geared	1923	American Metal Products Co.	Milwaukee, Wis.	W
344	400	585	4000	60	14" Merchant Mill	Geared	1922	Calumet Steel Co.	Chicago, Ill.	W
345	400-225	600-300	550	40	Bar Mill	Geared	1909	Ludlum Steel Co.	Watervliet, N. Y.	GE
346	400	600	440	60	Piercing Mill	Geared	1915	Chase Metal Works	Waterbury, Conn.	GE
347	400	600	440	60	Billet Piercing Machine	Geared	1915	Chase Metal Works	Waterbury, Conn.	GE
348	400	600	440	60	Brass Mill	Geared	1917	Rome Brass & Copper Co.	Rome, N. Y.	GE
349	400	600	2200	60	Wire Rod Mill	Geared	1917	Rome Wire Co.	Rome, N. Y.	AC
350	400	600	440	60	Wire Mill	Coupled	1917	Rome Wire Co.	Rome, N. Y.	AC
351	400	600	440	60	12" Merchant Mill	Geared	1919	The Stanley Works	New Britain, Conn.	GE
352	400	600	440	60	Tube Mill	Geared	1920	Globe Seamless Tube Co.	Milwaukee, Wis.	AC
353	400	600	2200	60	Brass Mill	Geared	1921	American Brass Company	Torrington, Conn.	GE
354	400	600	550	60		Geared	1912	National Conduit & Cable Co.	Hast.on Hudson,N.Y	AC
355	400	600	2200	60	Zinc Mill	Geared	1922	Ball Brothers Glass Co.	Muncie, Ind.	GE
356	400	600	220	60		Coupled	1918	Consumers Steel Co.	Chicago, Ill.	AC
357	400	600	2200	50	2-Roughing Stands—Brass Rolling Mills	Geared	1925	American Brass Co.	Torrington, Conn.	GE
358	400	600	2300	60	Tube Welding Mill	Geared	1927	South Chester Tube Co.	Chester, Pa.	GE
359	400	600	2300	60	Brass Mill	Geared	1928	Chase Companies, Inc.	Waterville, Conn.	GE
360	400	600	2300	60	Brass Mill	Geared	1928	Chase Companies, Inc.	Waterville, Conn.	GE
361	400	700	440	60	Merchant Mill	Geared	1928	Vulcan Crucible Steel Co.	Alliquippa, Pa.	W
362	400	705	2200	60	16" Cogging Mill	Geared	1923	Crucible Steel Co. of America Park Works	Pittsburgh, Pa.	W
363	400	720-450	2200	60	Bar Mill	Geared	1917	Cyclops Steel Co.	Titusville, Pa.	AC
364	400	720	2200	60	Copper Mill	Geared	1920	Rome Wire Co.	Rome, N. Y.	GE
365	400	720	550	60	Copper Mill	Geared	1920	Phillips Wire Co.	Pawtucket, R. I.	GE
366	400	720	4600	60	Copper Mills	Geared	1927	Higgins Brass & Mfg. Co.	Detroit, Mich.	GE
367	400	720	4600	60	Copper Mills	Geared	1927	Higgins Brass & Mfg. Co.	Detroit, Mich.	GE
368	400	750	4400	25	Rail Splitter	Geared	1925	Buffalo Steel Co.	Tonawanda, N. Y.	GE
369	400-200	800-400	230	d.c.	Copper Sheet Mill	Geared	1925	Rome Brass & Copper Co.	Rome, N. Y.	GE
370	400-265	875-585	2200	60	Bar Mill	Geared	1913	Old Dominion Iron & Nail Co.	Richmond, Va.	W
371	400	900	550	60	Brass Mill	Geared	1920	American Brass Company	Ansonia, Conn.	GE
372	400	900	550	60	Brass Mill	Geared	1920	American Brass Company	Ansonia, Conn.	GE
373	400	900	550	60	Brass Mill	Geared	1920	American Brass Company	Ansonia, Conn.	GE
374	400	900	550	60	Brass Mill	Geared	1920	American Brass Company	Ansonia, Conn.	GE
375	400	900	2200	60	Bar and Billet Mill	Geared	1925	Crucible Steel Co.	Pittsburgh, Pa.	W
376	400	900	550	60	Brass Mill	Geared	1921	American Brass Company	Ansonia, Conn.	GE
377	450	125	6600	25	12" Bar Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
378	450	200-400	230	d.c.	Zinc Sheet Mill, 26" x 72"	Geared	1924	Illinois Zinc Co.	Peru, Illinois	W
379	450	211-422	600	d.c.	9" Merchant Mill	Geared	1926	Illinois Steel Co.	Gary, Ind.	GE
380	450	211-422	600	d.c.	9" Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
381	450	300	2200	60			1920	Pittsburgh Steel Prod. Co.	Allenport, Pa.	AC
382	450	300	2200	60			1920	Pittsburgh Steel Prod. Co.	Allenport, Pa.	AC

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
383	450	300	230	d.c.	10″ Tube Mill	Coupled	1911	Pittsburgh Seamless Tube Co.	Beaver Falls, Pa.	CW
384	450	354-230	2200	60	8″ Merchant Mill	Direct	1919	Bourne-Fuller Co.	Cleveland, Ohio	W
385	450	375	440	25	Cold Roll	Geared	1925	Seneca Iron & Steel Co.	Blasdell, N. Y.	CW
386	450	400-650	230	d.c.	Rod (1 Stand) No. 2 Mill	Direct	1913	American Steel & Wire Co.	Worcester, Mass.	W
387	450	440	2200	60	Merchant Mill	Geared	1920	Kansas City Bolt & Nut Co.	Kansas City, Mo.	W
388	450	440-350	2220	60	Cont. Hoop (Finishing)	Direct	1920	Conners Steel Co.	Birmingham, Ala.	W
389	450	450-600	230	d.c.	12″ Cold Strip Mill	Geared	1915	Superior Steel Co.	Carnegie, Pa.	W
390	450	450-600	230	d.c.	12″ Cold Strip Mill	Geared	1915	Superior Steel Co.	Carnegie, Pa.	W
391	450	450	2080	60	18″ Merchant Mill	Geared	1919	Columbia Steel Co.	Pittsburgh, Cal.	GE
392	450	450	2080	60	12″ Merchant Mill	Geared	1919	Columbia Steel Co.	Pittsburgh, Cal.	GE
393	450	500	440	60	Brass Rolling Mill	Geared	1918	Michigan Copper & Brass Co.	Detroit, Mich.	W
394	450	514	550	60	14″ Cold Strip Mill	Geared	1922	Wallingford Steel Co.	Wallingford, Conn.	GE
395	450	550-750	230	d.c.	Zinc Rolls	Coupled	1924	Mattheisen & Hegeler Zinc Co.	LaSalle, Ill.	CW
396	450	550-750	230	d.c.	Zinc Strip Mills	Geared	1925	Mattheisen & Hegeler Zinc Co.	LaSalle, Ill.	CW
397	450	585	2200	50	14″ Merchant Mill	Geared	1918	Columbia Steel Co.	Los Angeles, Cal.	W
398	450	600	550	60	Copper Rod Mill	Geared	1920	Phillips Wire Co.	Pawtucket, R. I.	GE
399	450	700-595	2200	60	Cont. Hoop (Finishing)	Direct	1921	Conners Steel Co.	Birmingham, Ala.	W
400	450	720	2200	60	Piercing Mill	Geared	1924	Standard Seamless Tube Co.	Economy, Pa.	GE
401	450	720	2200	60	Seamless Tube	Geared	1927	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
402	450	720	2200	60	Wire Bench Mill	Geared	1928	Gulf States Steel Co.	Alabama City, Ala.	W
403	450	720	2200	60	Wire Bench Mill	Geared	1928	Gulf States Steel Co.	Alabama City, Ala.	W
404	450	720	2200	60	Wire Bench Mill	Geared	1928	Gulf States Steel Co.	Alabama City, Ala.	W
405	450	730-490	4000	25	10″ Merchant Mill	Geared	1917	Atlas Steel Corporation	Dunkirk, N. Y.	W
406	450	730	6600	25	Hoop Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	W
407	450	730	6600	25	Hoop Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	W
408	450	870	440	60	Copper Clad Mill	Geared	1915	Duplex Metal Co.	Philadelphia, Pa.	W
409	450-360	870-695	2200	60	10″ Merchant Mill	Geared	1914	Cleveland Hardware Co.	Cleveland, Ohio	W
410	450-360	875-700	2200	60	9″ Merchant Mill	Geared	1915	National Lock Washer Co.	Riverside, N. J.	W
411	475-350	240-181	440	25	10″ Merchant Mill	Direct	1914	Kansas City Bolt & Nut Co.	Kansas City, Mo	W
412	485-360	870-695	2200	60	10″ Merchant Mill	Geared	1915	Old Dominion Iron & Nail Co.	Richmond, Va.	W
413	500	0-200	500	d.c.	78″ Reversing Brass Plate	Geared	1920	West Virginia Metal Products Co.	Fairmont, W. Va.	W
414	500	88	6600	25	16″ Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa	GE
415	500	120	2200	60	Copper Rod Mill	Direct	1927	Washburn Wire Co.	Phillipsdale, R. I.	AC
416	500-385-250	130-100-65	440	25	14″ Merchant Mill	Direct	1923	Halcomb Steel Co.	Syracuse, N. Y.	GE
417	500	130-310	600	d.c.	10″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
418	500	150-225	250	d.c.	12″ Merchant Mill	Direct	1919	National Farming Mach. Co., Ltd.	Montmagny, P. Q.	W
419	500	150-550	600	d.c.	10″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
420	500	150-300	600	d.c.	10″ Merchant Mill	Direct	1928	Steel Co. of Canada	Hamilton, Ont.	W
421	500	150-450	230	d.c.	Merchant Mill	Direct	1928	Barton Spider Web. Co.	Chicago, Ill.	W
422	500	155-500	250	d.c.	Tyre Mill	Direct	1923	McConway Torley Co.	Pittsburgh, Pa.	W
423	500	175-350	250	d.c.	12″ Merchant Mill	Direct	1926	Pittsburgh Crucible Steel Co.	Midland, Pa.	GE
424	500	175-350	600	d.c.	12″ Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
425	500	175-350	600	d.c.	12″ Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
426	500	175-350	600	d.c.	12″ Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
427	500	180-360	600	d.c.	14″-12″ Skelp Mill	Geared	1926	Wheeling Steel Corp.	Benwood, W. Va.	GE
428	500	184	2200	25	12″ Merchant Mill	Rope	1905	Ontario Iron & Steel Co.	Welland, Ont.	W
429	500	184	2200	25	16″ Merchant Mill	Direct	1908	Bethlehem Steel Co.	Johnstown, Pa.	W
430	500	190	230	d.c.	18″ Tandem Rough. Mill	Rope	1910	Sharon Steel Hoop Co.	Sharon, Pa.	GE
431	500	190	230	d.c.	24″ Blooming Mill	Geared	1910	Sharon Steel Hoop Co.	Sharon, Pa.	GE
432	500	200-400	250	d.c.	10″ Cont. Mill	Coupled	1925	Republic Iron & Steel Co.	Youngstown, Ohio	AC
433	500	200-400	600	d.c.	10″ Merchant Mill	Direct	1928	Steel Co. of Canada	Hamilton, Ont.	W
434	500	210-525	600	d.c.	16″ Strip Mill	Geared	1928	Weirton Steel Co.	Weirton, W. Va.	GE
435	500	214	6600	25	Axle Mill	Geared	1909	Illinois Steel Co.	Gary, Ind.	GE
436	500	220-400	550	d.c.	Brass Mill	Geared	1913	Scovill Manufacturing Co.	Waterbury, Conn.	W
437	500	220-400	550	d.c.	Brass Mill	Geared	1913	Scovill Manufacturing Co.	Waterbury, Conn.	W
438	500	220-400	550	d.c.	Brass Mill	Geared	1913	Scovill Manufacturing Co.	Waterbury, Conn.	W
439	500	220-400	550	d.c.	Brass Mill	Geared	1913	Scovill Manufacturing Co.	Waterbury, Conn.	W
440	500	220-400	550	d.c.	Brass Mill	Geared	1913	Scovill Manufacturing Co.	Waterbury, Conn.	W
441	500	234	2200	60	Tube Mills	Coupled	1922	Pittsburgh Steel Products Co.	Allenport, Pa.	CW
442	500	240	2200	60	Cold Roll Mill	Geared	1928	Columbia Steel Corp.	Pittsburgh, Cal.	W
443	500-330	242-161	440	25	16″ and 10″ Merchant Mill	Direct & Rope	1913	Kansas City Bolt & Nut Co.	Kansas City, Mo.	W
444	500	244	2200	25	10″ Merchant Mill	Direct	1908	Bethlehem Steel Co.	Johnstown, Pa.	W
445	500-500	250-325	230	d.c.	8″ Hoop Mill	Direct	1909	Atlantic Steel Co.	Atlanta, Ga.	GE
446	500	250-500	230	d.c.	9″ Hoop Mill Finishing	Direct	1914	Sharon Steel Hoop Co.	Sharon, Pa.	W
447	500	250	440	25	10″ Bar Mill	Geared	1917	Simonds Manufacturing Co.	Lockport, N. Y.	GE
448	500	250	2200	60	Tube Mill	Coupled	1918	Pittsburgh Steel Products Co.	Allenport, Pa.	CW
449	500	250	2200	60	Tube Mill	Geared	1918	Pittsburgh Steel Products Co.	Allenport, Pa.	CW
450	500	250	6600	25	Sheet Mill Cold Rolls	Geared	1919	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
451	500	250-350	600	d.c.	9″ Merchant Mill	Direct	1921	Missouri Rolling Mill Co.	St. Louis ,Mo.	W
452	500	250-600	250	d.c.	12-9″ Mill	Coupled	1925	Bethlehem Steel Co.	Johnstown, Pa.	AC
453	500	250-380	600	d.c.	10″ Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, O.	W
454	500	250-500	600	d.c.	10″ Merchant Mill	Direct	1928	Steel Co. of Canada	Hamilton, Ont.	W
455	500	257	2300	60	Rail Mill	Geared	1928	West Virginia Rail Co.	Huntington, W. Va.	AC
456	500	267-800	230	d.c.	Hot Merchant Mill	Geared	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
457	500	267-800	230	d.c.	Hot Merchant Mill	Direct	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
458	500	267-800	230	d.c.	Hot Merchant Mill	Direct	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
459	500	267-800	230	d.c.	Hot Merchant Mill	Direct	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
460	500	267-800	230	d.c.	Hot Merchant Mill	Geared	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
461	500	267-800	230	d.c.	Merchant Mill	Geared	1927	Allegheny Steel Co.	Brackenridge, Pa.	GE
462	500	290	4000	60	8″ Merchant Mill	Direct	1920	Calumet Steel Co.	Cicago, Ill.	W
463	500	290	2200	25	Brass Mill	Geared	1920	American Brass Co.	Buffalo, N. Y.	W
464	500	300	2200	60	Sheet Mill		1915	U. S. Aluminum Co.	New Kensington, Pa.	AC
465	500	300	2200	60	Sheet Mill		1915	U. S. Aluminum Co.	New Kensington, Pa.	AC
466	500	300	2200	60	Sheet Mill		1915	U. S. Aluminum Co.	New Kensington, Pa.	AC
467	500	300	2200	60	Squeezer	Geared	1919	Pacific Coast Steel Co.	Seattle, Wash.	AC
468	500	300	2200	60	Bar Mill	Coupled	1920	Ft. Wayne Rolling Mill Co.	Ft. Wayne, Ind.	AC
469	500	300-450	230	d.c.	Lap Welding Mill	Coupled	1923	Gary Tube Co.	Gary, Ind.	AC
470	500	320	2200	60	12″ Merchant Mill	Geared	1919	Baltimore & Ohio Railroad	Cumberland, Md.	W
471	500-500	327-200	440	60	9″ Merchant Mill	Direct	1913	Bourne-Fuller Co.	Cleveland, Ohio	GE
472	500	340-543	600	d.c.	10″ Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, O.	W
473	500	350	2200	60	Cold Rolling Mill	Geared	1916	Mansfield Sheet & Tin Plate Co.	Mansfield, Ohio	W
474	500	350	440	60	Cold Rolling Mill	Geared	1916	Andrews Steel Co.	Newport, Ky.	W
475	500	353	2200	60		Geared	1928	Central Alloy Steel Co.	Canton, Ohio	AC
476	500	360	2200	25	8″ Merchant Mill	Direct	1913	Bethlehem Steel Co.	Johnstown, Pa.	W
477	500	360	2200	60	Tube Mill	Geared	1915	American Brass Company	Waterbury, Conn.	GE
478	500	360	2200	60	16″ Bar Mill	Geared	1915	Tennessee Coal, Iron & R. R. Co.	Bessemer, Ala.	GE
479	500	360	2200	60	Copper Mill	Geared	1917	Anaconda Copper Mining Co.	Black Eagle, Mont.	GE
480	500	360	2200	60	Sheet Mill, Cold Rolls	Geared	1920	Central Steel Co.	Massillon, Ohio	GE
481	500	360	2200	60	Sheet Mill, Cold Rolls	Geared	1920	Central Steel Co.	Massillon, Ohio	GE
482	500	360	2200	60	Sheet Mill, Cold Rolls	Geared	1920	Republic Iron & Steel Co.	Youngstown, Ohio	GE
483	500	360	2200	60	Billet Piercing Mill	Geared	1922	Weldless Tube Co.	Wooster, Ohio	GE
484	500	360	440	60	Brass Mill	Direct	1923	Rome Brass and Copper Co.	Rome, N. Y.	GE
485	500	360	440	60	Brass Mill	Direct	1923	Rome Brass and Copper Co.	Rome, N. Y.	GE
486	500	360-612	600	d.c.	Reversing Hot Mill	Geared	1925	Mich. Copper & Brass Co.	Detroit, Mich.	GE
487	500	365	440	25	Copper Rolling Mill	Rope	1922	Baltimore Copper Smelt.& Roll.Co.	Baltimore, Md.	W
488	500	368	2200	25	Brass Mill	Geared	1920	American Brass Company	Kenosha, Wis.	W
489	500	375	2200	25	Wheel Mill	Geared	1913	Bethlehem Steel Co.	Johnstown, Pa.	AC
490	500	375	2300	25		Geared	1919	Buffalo Copper & Brass Co.	Buffalo, N. Y.	AC
491	500	375	2300	25		Geared	1925	Buffalo Copper & Brass Co.	Buffalo, N. Y.	AC
492	500	375	2200	25	10″ Aluminum Rod Mill	Geared	1926	U. S. Aluminum Co.	Massena, N. Y.	GE

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
493	500	375–750	440	25	Copper Sheet Mill	Geared	1928	American Smelting & Refining Co.	Baltimore, Md.	GE
494	500	400–800	230	d.c.	Cold Strip Mill	Geared	1927	Newton Steel Co.	Newton Falls, Ohio	W
495	500	400–800	230	d.c.	Tube Reeling Mill	Geared	1927	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
496	500	400–800	230	d.c.	Tube Reeling Mill	Geared	1927	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
497	500	400–800	230	d.c.	14″ Tandem Copper Mill	Geared	1927	Rome Brass & Copper Co.	Rome, N. Y.	GE
498	500	400–800	230	d.c.	14″ Tandem Copper Mill	Geared	1927	Rome Brass & Copper Co.	Rome, N. Y.	GE
499	500	400–800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
500	500	400–800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
501	500	400–800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
502	500	400–800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
503	500	400–800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
504	500	400–800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
505	500	400–800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
506	500	400–800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
507	500	400–800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
508	500	400–800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
509	500–500	400–600	230	d.c.	Hoop Mill	Geared	1920	Atlantic Steel Co.	Atlanta, Ga.	GE
510	500	400–600	600	d.c.	8″ Strip Mill	Direct	1928	Superior Steel Corp.	Carnegie, Pa.	W
511	500	400–800	230	d.c.	12″–9″ Merchant Mill	Geared	1928	Timken Roller Bearing Co.	Canton, Ohio	AC
512	500	435	440	60	8″ Merchant Mill	Rope	1911	Carnegie Steel Co. Painter Mills	Pittsburgh, Pa.	W
513	500	435	440	60	8″ Merchant Mill	Rope	1912	Carnegie Steel Co. Painter Mills	Pittsburgh, Pa.	W
514	500	435	440	60	8″ Merchant Mill	Rope	1912	Carnegie Steel Co. Painter Mills	Pittsburgh, Pa.	W
515	500	435	440	60	9″ Merchant (Fin.) Mill	Belted	1914	Carnegie Steel Co. Painter Mills	Pittsburgh, Pa.	W
516	500	435	440	60	10″ Merchant Mill	Belted	1914	Carnegie Steel Co. Painter Mills	Pittsburgh, Pa.	W
517	500	435	2200	60	Merchant Mill	Geared	1916	Seymour Manufacturing Co.	Waterbury, Conn.	W
518	500	435–722	600	d.c.	10″ Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, Ohio	W
519	500	440	2200	60	Copper Rod Mill	Geared	1923	American Brass Company	Kenosha, Wis.	W
520	500	440	2200	60	Bar Mill	Geared	1924	Universal Steel Co.	Bridgeville, Pa.	AC
521	500	440	4000	60	Bar Mill	Coupled	1923	Bryden Neverslip Co.	Catasauqua, Pa.	AC
522	500	442	2200	60	Cold Rolling Mill	Geared	1922	Follansbee Bros. Co.	Toronto, Ohio	W
523	500	440	440	60	16″ Bar Mill	Chain	1928	Phoenix Horseshoe Co.	Joliet, Ill.	W
524	500	450	440	60	Bar Mill	Geared	1910	Chase Rolling Mills Co.	Waterbury, Conn.	GE
525	500	450	440	60	Bar Mill	Geared	1910	Chase Rolling Mills Co.	Waterbury, Conn.	GE
526	500	450	550	60	12″ Cold Roll Mill	Geared	1914	Worcester Pressed Steel Co.	Worcester, Mass.	GE
527	500	450	440	60	16″ Bar Mill	Geared	1914	Carbon Steel Co.	Pittsburgh, Pa.	GE
528	500	450	2200	60	Brass Mill	Geared	1915	Scoville Manufacturing Co.	Waterbury, Conn.	GE
529	500	450	2200	60	Brass Mill	Geared	1915	Scoville Manufacturing Co.	Waterbury, Conn.	GE
530	500	450	2200	60	Brass Mill	Geared	1915	Scoville Manufacturing Co.	Waterbury, Conn.	GE
531	500	450	2200	60	Brass Mill	Geared	1915	Chase Metal Works	Waterbury, Conn.	GE
532	500	450	2200	60	Billet Mill	Geared	1915	International High Speed Steel Co.	Rockaway, N. J.	GE
533	500	450	2200	60	Sheet Mill	Geared	1915	American Brass Company	Torrington, Conn.	GE
534	500	450	2200	60	Tube Mill	Geared	1916	Ohio Seamless Tube Co.	Shelby, Ohio	GE
535	500	450	440	60	20″ Copper Mill	Geared	1916	Waclark Wire Co.	Elizabeth, N. J.	GE
536	500	450	440	60	Wire Mill	Geared	1916	Waclark Wire Co.	Elizabeth, N. J.	GE
537	500	450	2300	60	Merchant Mill	Geared	1916	Pacific Coast Steel Co.	San Francisco, Cal.	GE
538	500	450	2200	60	Copper Mill	Geared	1917	Anaconda Copper Mining Co.	Black Eagle, Mont.	GE
539	500	450	2200	60	Copper Mill	Geared	1917	Anaconda Copper Mining Co.	Black Eagle, Mont.	GE
540	500	450	2200	60	Brass Mill	Geared	1917	American Brass Company	Waterbury, Conn.	GE
541	500	450	2200	60	Brass Mill	Geared	1917	American Brass Company	Waterbury, Conn.	GE
542	500	450	440	60	20″ Copper Mill	Coupled	1918	Waclark Wire Co.	Bayway, N. J.	CW
543	500	450	2200	60	Tube Mill	Geared	1919	Ohio Seamless Tube Co.	Shelby, Ohio	GE
544	500	450	440	60	Brass Sheet Mill	Geared	1920	Detroit Copper & Brass Co.	Detroit, Mich.	GE
545	500	450	2200	60	Brass Mill	Geared	1921	American Brass Company	Torrington, Conn.	GE
546	500	450	2200	60	Brass Mill	Geared	1921	American Brass Company	Torrington, Conn.	GE
547	500	450	2200	60	14″ Roughing Mill	Geared	1921	International Nickel Co.	Huntington, W. Va.	AC
548	500	450	2200	60	9″ Finishing Mill	Geared	1921	International Nickel Co.	Huntington, W. Va.	AC
549	500	450	2200	60	Hoop Mill	Geared	1912	Carnegie Steel Co.	Pittsburgh, Pa.	CW
550	500	450	2200	60	Bar Mill	Geared	1925	Indianapolis Steel Products Co.	Indianapolis, Ind.	AC
551	500	450	2200	60	Copper Mill	Direct	1925	Anaconda Copper Mining Co.	Black Eagle, Mont.	GE
552	500	450	2300	60	Brass Mill	Geared	1928	Chase Companies, Inc.	Waterville, Conn.	GE
553	500	480–250	230	d.c.	Merchant Mill	Coupled	1923	Buffalo Bolt Co.	N. Tonawanda, N. Y.	CW
554	500	487	6600	25	8″ Merchant Mill	Direct	1913	Minnesota Steel Co.	Duluth, Minn.	W
555	500	500	2300	25	Milling Machine	Direct	1914	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
556	500 500 500	500–375–265	2200	25	10″ Merchant Mill	Direct & Belt	1916	Donner Steel Co.	Buffalo, N. Y.	GE
557	500	500	550	25	Tube Mill	Geared	1917	Baltimore Tube Co.	Baltimore, Md.	W
558	500	500	2300	25	18″ Merchant Mill	Geared	1919	Halcomb Steel Co.	Syracuse, N. Y.	GE
559	500	500	2200	25	16″ Bar Mill	Geared	1919	Hammond Steel Co.	Solvay, N. Y.	GE
560	500	500	2200	25	Continuous Tube Mill	Coupled	1915	Pittsburgh Steel Products Co.	Monessen, Pa.	CW
561	500	500	2200	25	Experimental Alum.	Geared	1925	U. S. Aluminum Co.	Massena, N. Y.	GE
562	500	500	2200	25	Aluminum Mill	Geared	1928	U. S. Aluminum Co.	Massena, N. Y.	GE
563	500	514	440	60	Bar Mill	Chain	1915	Simmons Mfg. Co.	Kenosha, Wis.	AC
564	500	514	2200	60	Bar Mill	Rope	1917	Henry Disston & Son	Philadelphia, Pa.	AC
565	500	514	550	60	18″ Copper Mill	Geared	1919	American Brass Co.	Hastings, N. Y.	GE
566	500	514	2200	60	Bar Mill	Geared	1919	Judson Mfg. Co.	Oakland, Calif.	AC
567	500	514	2200	60	Bar Mill	Geared	1920	Metals Production Equipment Co.	Springfield, Mass.	AC
568	500	514	2200	60	Bar Mill	Geared	1920	Metals Production Equipment Co.	Springfield, Mass.	AC
569	500	514	2200	60	Bar Mill	Geared	1920	Metals Production Equipment Co.	Springfield, Mass.	AC
570	500	514	2200	60	Brass Mill	Geared	1922	Western Cartridge Co.	East Alton, Ill.	GE
571	500	543–822	600	d.c.	10″ Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, Ohio	W
572	500	575–865	2200	60	10″ Merchant Mill	Geared	1921	International Nickel Co.	Huntington, W. Va.	W
573	500	575–865	2200	60	10″ Merchant Mill	Geared	1921	International Nickel Co.	Huntington, W. Va.	W
574	500	575	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
575	500	575	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
576	500	575	2200	60	Copper Rod Mill	Geared	1923	American Brass Company	Kenosha, Wis.	W
577	500	585	2200	60	Copper Rod Mill	Geared	1922	Eugene F. Phillips Elec. Wks., Ltd	Montreal, Que.	W
578	500–340	588–400	2200	60	Rod Mill	Geared	1928	Keystone Steel & Wire Co.	Peoria, Ill.	W
579	500	600	2200	60			1913	Cleveland Brass & Copper Co.	Cleveland, Ohio	AC
580	500	600	2200	60	Brass Mill	Geared	1917	American Brass Company	Waterbury, Conn.	GE
581	500	600	2200	60	Brass Mill	Geared	1917	American Brass Company	Waterbury, Conn.	GE
582	500	600	2200	60	Brass Mill	Geared	1917	American Brass Company	Torrington, Conn.	GE
583	500	600	2200	60	Bar Mill	Belted	1919	Joslyn Mfg. Co.	Chicago, Ill.	AC
584	500	600	2200	60	Merchant Mill	Geared	1923	Taunton-New Bedford Copper Co.	Taunton, Mass.	GE
585	500	600	2200	60	Copper Rolling Mill	Geared	1923	American Brass Company	Torrington, Conn.	GE
586	500	600	2200	60	Reducing Pipe Mill	Geared	1925	Ohio Seamless Tube Co.	Shelby, Ohio	GE
587	500	600	2200	60	Continuous Sheet Mill	Geared	1926	American Rolling Mill Co.	Ashland, Ky.	W
588	500	600	4600	60	Reducing Mill	Geared	1926	Detroit Seamless Steel Tube Co.	Detroit, Mich.	AC
589	500	600	440	60	Aluminum Mill	Geared	1922	Aluminum Goods Mfg. Co.	Manitowoc, Wis.	GE
590	500	600	2200	60	10″ Rod Mill	Geared	1927	Dilworth Porter Co.	Pittsburgh, Pa.	GE
591	500	667–1000	600	d.c.	10″ Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, Ohio	W
592	500	730–485	2200	50	8″ Merchant Mill	Geared	1919	Southern California Iron & Steel Co.	Los Angeles, Cal.	W
593	500–250	750–375	3000	50	Merchant Mill	Geared	1923	Consolidated Rolling Mills Co.	Mexico City, Mex.	GE
594	500–400	775–585	550	40	10″ Merchant Mill	Geared	1917	Cohoes Rolling Mill Co.	Cohoes, N. Y.	W
595	500	870	2200	60	16″ Merchant Mill	Geared	1919	McConway-Torley Co.	Pittsburgh, Pa.	W
596	500–400	875–700	550	60	10″–14″ Merchant Mill	Geared	1916	The Texas Steel Co.	Fort Worth, Texas	W
597	500	884	2200	60	9″ Rougher	Geared	1925	Crucible Steel Co.	Atha Works	W
598	500	888–540	6600	60	11″ Finishing Stand	Coupled		Tennessee Coal, Iron & R. R. Co.	Birmingham, Ala.	AC
599	500–250	890–513 440–256	2200	60	10″ Merchant Mill	Geared	1919	Hunter Crucible Steel Co.	Cleveland, Ohio	W
600	500	900	440	60	10″ Merchant Mill	Geared	1925	Latrobe Elec. Steel Co.	Latrobe, Pa.	GE
601	525	125	2200	25	Merchant Mill	Rope	1910	American Sheet & Tin Plate Co	Gary, Ind.	GE

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
602	525	125	2200	25	Merchant Mill	Rope	1910	American Sheet & Tin Plate Co.	Gary, Ind.	GE
603	550	120-300	250	d.c.	10" Merchant Mill	Direct	1923	Firth Sterling Steel Co.	McKeesport, Pa.	W
604	550	320-206	2200	60	10" Hoop Mill	Direct	1917	Atlantic Steel Co.	Atlanta, Ga.	W
605	550	336-588	600	d.c.	9" Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
606	550	420-714	600	d.c.	9" Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
607	550	420-714	600	d.c.	9" Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
608	550	575	2200	60	16" Skelp Mill	Geared	1919	Tyler Tube & Pipe Co.	Washington, Pa.	W
609	550-360	875-585	2200	60	12" Merchant Mill	Geared	1918	Norfolk & Western Railroad	Roanoke, Va.	W
610	550	880	2200	60	16" Merchant Mill	Geared	1919	Danville Structural Tubing Co.	Danville, Pa.	W
611	550	880	2200	60	Merchant Mill	Geared	1921	Danville Structural Tubing Co.	Danville, Pa.	W
612	575	300-214	6600	25	10" Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
613	575-575	375-250	6600	25	8" Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
614	600	90	440	60	Brass & Nickel Silver Rolling Mill	Direct	1928	Waterbury Rolling Mills	Waterbury, Conn.	EM
615	600	150	550	60	Sheet Mill, Cold Rolls	Rope	1909	Weirton Steel Co.	Weirton, W. Va.	GE
616	600-600	150-250	575	d.c.	6" Hot Strip Mill	Direct	1913	American Steel & Wire Co.	Cleveland, Ohio	GE
617	600	185-470	600	d.c.	10" Strip Mill	Direct	1926	LacLede Steel Co.	Alton, Ill.	W
618	600	200-300	230	d.c.	9" Merchant Mill	Direct	1914	United Alloy Steel Corporation	Canton, Ohio	W
619	600	200-300	230	d.c.	9" Merchant (Fin.) Mill	Direct	1915	United Alloy Steel Corporation	Canton, Ohio	W
620	600	205-515	600	d.c.	Merchant Mill	Geared	1928	American Steel & Wire Co.	Cleveland, Ohio	W
621	600	205-515	600	d.c.	Merchant Mill	Geared	1928	American Steel & Wire Co.	Cleveland, Ohio	W
622	600-600	214- 93	6600	25	12" Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
623	600	214	440	25			1920	Baltimore Copper S. & R. Co.	Baltimore, Md.	AC
624	600	214	440	25			1920	Baltimore Copper S. & R. Co.	Baltimore, Md.	AC
625	600-600	225-425	550	d.c.	12" Hot Strip Mill	Direct	1916	American Steel & Wire Co.	Cleveland, Ohio	GE
626	600	227-454	230	d.c.	12"-9" Merchant Mill	Geared	1928	Timken Roller Bearing Co.	Canton, Ohio	AC
627	600	270-635	600	d.c.	10" Strip Mill	Direct	1926	LacLede Steel Co.	Alton, Ill.	W
628	600	290	2200	25	60" Sheet Jobbing Mill	Geared	1927	AlanWood Iron & Steel Co.	Conshohocton, Pa.	W
629	600-600	300-214	2200	25	Bar Mill	Coupled & Rope	1914	St. Louis Screw Co.	St. Louis, Mo.	AC
630	600	300-214	2200	25	Bar Mill	Chain	1914	St. Louis Screw Co.	St. Louis, Mo.	AC
631	600	300	2200	25	Muck Mill	Chain	1914	St. Louis Screw Co.	St. Louis, Mo.	AC
632	600	300	2200	60	Sheet Mill	Geared	1917	Universal Rolling Mill Co.	Bridgeville, Pa.	AC
633	600	300	2200	60	Tube Mill	Coupled	1918	Pittsburgh Steel Products Co.	Allenport, Pa.	CW
634	600	300	440	25	Tandem Plate Mill	Rope	1920	Baltimore Copper S. & R. Co.	Baltimore, Md.	AC
635	600	300	440	25	Tandem Plate Mill	Rope	1920	Baltimore Copper S. & R. Co.	Baltimore, Md.	AC
636	600	300	2200	60	Tube Mill	Coupled	1917	Pittsburgh Steel Products Co.	Monessen, Pa.	CW
637	600	300	550	60	Copper Rod Mill	Direct	1926	American Brass Co.	Ansonia, Conn.	GE
638	600	300-330	230	d.c.	10" Bar Mill	Coupled	1921	Universal Steel Co.	Bridgeville, Pa.	CW
639	600-400-200	321-214-107	440	25	9" Merchant Mill	Direct	1923	Halcomb Steel Co.	Syracuse, N. Y.	GE
640	600	350-788	250	d.c.	10" Merchant Mill	Geared	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
641	600	350-788	250	d.c.	10" Merchant Mill	Geared	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
642	600	350-788	250	d.c.	10" Merchant Mill	Geared	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
643	600	350-700	600	d.c.	Wire Rod Mill	Geared	1928	John A. Roebling's Sons	Trenton, N. J.	GE
644	600	360	2200	60	Tube Mill	Geared	1914	Standard Seamless Tube Co.	Economy, Pa.	GE
645	600	360	2200	60	10" Hot Strip Mill	Direct	1919	Superior Steel Co.	Carnegie, Pa.	GE
646	600	360-440	500	d.c.	Aluminum Mill	Geared	1919	U. S. Aluminum Co.	Marysville, Tenn.	W
647	600	360-440	500	d.c.	Aluminum Mill	Geared	1919	U. S. Aluminum Co.	Marysville, Tenn.	W
648	600	360-440	500	d.c.	Aluminum Mill	Geared	1919	U. S. Aluminum Co.	Marysville, Tenn.	W
649	600	360	440	60	Copper Mills	Geared	1923	Am. Insulated Wire & Cable Co.	Chicago, Ill.	GE
650	600	360	550	60	Copper Rod Mill	Direct	1926	American Brass Co.	Ansonia, Conn.	GE
651	600	365	6600	25	10" Merchant Mill	Direct	1913	Minnesota Steel Co.	Duluth, Minn.	W
652	600	368	6600	25	18"-21" Roughing Mill	Geared	1924	Pittsburgh Crucible Steel Co.	Midland, Pa.	AC
653	600-400	375-210	2200	25	9" Merchant Mill	Direct	1912	Gulf States Steel Co.	Birmingham, Ala.	GE
654	600	390	440	60	20" Merchant Mill	Geared	1916	Stanley Works	New Haven, Conn.	W
655	600	390	440	60	Cold Strip Mill	Geared	1917	Stanley Works	New Haven, Conn.	W
656	600	400-800	250	d.c.	18" Merchant Mill	Geared	1926	Pittsburgh Crucible Steel Co.	Midland, Pa.	GE
657	600	400	2300	60	10" Rod Mill	Direct	1927	Copperweld Steel Co.	Glassport, Pa.	GE
658	600	400-800	230	d.c.	Cold Strip Mill	Geared	1927	American Rolling Mill Co.	Ashland, Ky.	W
659	600	400-800	230	d.c.	Cold Strip Mill	Geared	1927	American Rolling Mill Co.	Ashland, Ky.	W
660	600	400-800	230	d.c.	Cold Strip Mill	Geared	1927	American Rolling Mill Co.	Ashland, Ky.	W
661	600	400-800	230	d.c.	Cold Strip Mill	Geared	1927	American Rolling Mill Co.	Ashland, Ky.	W
662	600	400-800	230	d.c.	Cold Strip Mill	Geared	1927	American Rolling Mill Co.	Ashland, Ky.	W
663	600	400-900	250	d.c.	12" Hoop Mill	Geared	1928	Carnegie Steel Co.	Youngstown, O.	W
664	600	400-900	250	d.c.	12" Hoop Mill	Geared	1928	Carnegie Steel Co.	Youngstown, O.	W
665	600	400-900	250	d.c.	12" Hoop Mill	Geared	1928	Carnegie Steel Co.	Youngstown, Ohio	W
666	600	440	2200	60	10" Rod Mill	Direct	1917	Wickwire Spencer Steel Corp.	Palmer, Mass.	W
667	600	450	2200	60	Aluminum Strip Mill	Geared	1914	Cleveland Metal Products Co.	Cleveland, Ohio	GE
668	600	450-900	600	d.c.	10" Merchant Mill	Geared	1928	Steel Co. of Canada	Hamilton, Ont.	W
669	600	450-900	600	d.c.	10" Merchant Mill	Geared	1928	Steel Co. of Canada	Hamilton, Ont.	W
670	600-600-600	469-375-281	2200	25	8" Merchant Mill	Direct	1919	Donner Steel Co.	Buffalo, N. Y.	GE
671	600	485	2200	25	10" Merchant Mill	Direct	1912	Laclede Steel Co.	Alton, Ill.	W
672	600	485	440	25	20" Merchant Mill	Geared	1915	Hess Steel Corporation	Baltimore, Md.	W
673	600	485	550	25	Piercing Mill	Geared	1915	Baltimore Tube Co.	Baltimore, Md.	W
674	600	490	2200	25	16" Bar Roughing Mill	Geared	1919	Scullin Steel Co.	St. Louis, Mo.	W
675	600	500	2200	60	20" Merchant Mill	Geared	1916	Carpenter Steel Co.	Reading, Pa.	W
676	600	500	2200	60	16" Merchant Mill	Geared	1917	Central Steel Co.	Massillon, Ohio	W
677	600	500	440	25	16" Merchant Mill	Geared	1919	Buffalo Bolt Co.	N.Tonawanda, N. Y.	GE
678	600	500	575	25	Brass Sheet Mill	Geared	1920	Baltimore Tube Co.	Baltimore, Md.	GE
679	600	500	575	25	Brass Sheet Mill	Geared	1920	Baltimore Tube Co.	Baltimore, Md.	GE
680	600-440	514-300	4150	60	10" Merchant Mill	Rope	1912	W. Ames & Co.	Jersey City, N. J.	GE
681	600	514	440	60	Aluminum Mill	Geared	1922	Aluminum Goods Mfg. Co.	Manitowoc, Wis.	GE
682	600	514	2200	60	Brass Mill	Geared	1922	Western Cartridge Co.	East Alton, Ill.	GE
683	600	514	2200	60	18" Bar Mill	Geared	1926	American Nickel Corp.	Hyde, Pa.	GE
684	600	514	2300	60	8" Rod Mill	Direct	1927	Copperweld Steel Co.	Glassport, Pa.	GE
685	600	585-325	550	40	15" Merchant Mill	Geared	1917	Cohoes Rolling Mill Co.	Cohoes, N. Y.	W
686	600	585	2200	60	Sheet Mill	Geared	1928	American Rolling Mill Co.	Ashland, Ky.	W
687	600-500-400	600-500-400	2200	25	Merchant Mill, No. 10	Direct	1916	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
688	600-300	600-300	550	60	9" Bar Mill No. 2	Geared	1926	Ludlum Steel Co.	Watervliet, N. Y.	GE
689	600	600	4000	60	Brass Mill	Geared	1919	Bristol Brass Co.	Bristol, Conn.	GE
690	600	600	2200	60	Copper Mill	Geared	1920	American Brass Co.	Waterbury, Conn.	GE
691	600	600	440	60	16" Merchant Mill		1920	Wayne Steel Co.		AC
692	600	600	2300	60		Coupled		Fulton Steel Corp.	Fulton, N. Y.	AC
693	600	600	2200	60	Brass Mill	Geared	1921	American Brass Co.	Waterbury, Conn.	GE
694	600	600	550	60	Copper Rod Mill	Geared	1925	Phillips Wire Co.	Pawtucket, R. I.	GE
695	600	600	2200	60	8" Merchant Mill	Geared	1928	Timken Roller Bearing Co.	Canton, Ohio	GE
696	600	705	2200	60	Merchant Mill	Geared	1927	Pollak Steel Co.	Cincinnati, O.	W
697	600	705	2200	60	10" Rod Mill	Geared	1927	Washburn Wire Co.	Phillipsdale, R. I.	AC
698	600-600	720-360	6600	60	Hot Strip Mill	Geared	1916	Weirton Steel Co.	Weirton, W. Va.	AC
699	600	720	4000	60	Rail Re-rolling	Geared	1927	Northern Steel Co.	Medford, Mass.	GE
700	600	720	2200	60	18" Breakdown Mill	Geared	1928	Kilby Car & Foundry Co.	Anniston, Ala.	GE
701	600	885	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
702	600	885	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
703	600	900	440	60	Copper Rod Mill	Geared	1920	Western Elec. Co.	Hawthorne, Ill.	GE
704	600	900	550	60	Brass Mill	Geared	1920	American Brass Co.	Ansonia, Conn.	GE
705	600	900	440	60	Copper Mill	Geared	1923	Am. Insulated Wire & Cable Co.	Chicago, Ill.	GE
706	600	900	2300	60	10" Mill	Geared	1927	Copperweld Steel Co.	Glassport, Pa.	GE
707	600	885	2300	60	Rail Mill	Geared	1928	West Virginia Rail Co.	Huntington, W. Va.	AC
708	650	160	440	60	14" Guide Mill	Coupled		Witherow Steel Co.	Neville Island, Pa.	AC
709	650	184	6600	25	18" Merchant Mill	Direct	1909	Indiana Steel Co.	Gary, Ind.	W
710	650	184	6600	25	14" Merchant Mill	Direct	1909	Indiana Steel Co.	Gary, Ind.	W

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
711	650	200	440	60	14″ Guide Mill	Coupled		Witherow Steel Co.	Neville Island, Pa.	AC
712	650	210	6600	25	12″ Merchant Mill	Geared	1909	Indiana Steel Co.	Gary, Ind.	W
713	650	225–400	600	d.c.	Seamless Mill	Geared	1925	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
714	650	225–400	600	d.c.	Seamless Mill	Geared	1925	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
715	650	225–400	600	d.c.	Seamless Mill	Geared	1925	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
716	650	293	2200	60	9″ Merchant Mill	Rope	1919	Harrisburg Pipe & Pipe Bending Co.	Harrisburg, Pa.	W
717	650	500	6600	25	10″ Merchant Mill	Direct	1916	Illinois Steel Co.	Gary, Ind.	GE
718	650	500	6600	25	10″ Merchant Mill	Direct	1916	Illinois Steel Co.	Gary, Ind.	GE
719	700	86	450	d.c.	Shear Intensifier	Direct	1918	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	GE
720	700	130–310	600	d.c.	10″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
721	700	130–310	600	d.c.	10″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
722	700	187	2200	25	14″ Merchant Mill	Direct	1920	Donner Steel Co.	Buffalo, N. Y.	GE
723	700	200	240	d.c.	Pontoon Mill	Direct	1926	M. W. Kellogg	Newark, N. J.	CW
724	700	200	240	d.c.	Pontoon Mill	Direct	1926	M. W. Kellogg	Newark, N. J.	CW
725	700	210–660	600	d.c.	10″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
726	700	210–660	600	d.c.	10″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
727	700	250	2200	25	18″ Bar Mill	Rope	1911	Dillworth Porter Co.	Pittsburgh, Pa.	GE
728	700	240-450	250	d.c.	9″ Merchant Mill	Direct	1925	Crucible Steel Co.	Pittsburgh, Pa.	GE
729	700	270–520	250	d.c.	10″ Merchant Mill	Direct	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
730	700	295	440	60		Geared	1925	Witherow Steel Co.	Neville Island, Pa.	AC
731	700	300–400	230	d.c.	Lap Welding Mill	Coupled	1923	Gary Tube Co.	Gary, Ind.	AC
732	700	320	2200	60	Sheet and Jobbing Mill	Direct	1917	Carbon Steel Co.	Pittsburgh, Pa.	W
733	700	360	440	60	Brass Mill	Chain		Detroit Copper & Brass Co.	Detroit, Mich.	AC
734	700	364	2200	25	8″ Merchant Mill	Direct	1912	Laclede Steel Co.	Alton, Ill.	W
735	700	390	2200	60	18″ Bar Mill	Geared	1922	Dilworth Porter Co.	Pittsburgh, Pa.	W
736	700–600–400	400–300–200	2200	25	Merchant Mill, No. 10	Direct	1916	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
737	700–600–400	400–300–200	2200	25	Merchant Mill, No. 10	Belt	1916	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
738	700	440	2200	60	16″ Mill	Geared	1926	Connors Steel Co.	Birmingham, Ala.	AC
739	700	480–290	2200	25	12″ Merchant Mill	Geared	1916	Halcomb Steel Co.	Syracuse, N. Y.	W
740	700	490	6600	25	Hoop Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	W
741	700	490	6600	25	Hoop Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	W
742	700	502	2200	60	Cold Rolling Mill	Direct	1919	Carnahan Tin Plate & Steel Co.	Canton, Ohio	W
743	700	585	2200	60	Copper Rod Mill	Geared	1922	Eugene F. Phillips Elec. Wks., Ltd.	Montreal, Que.	W
744	700	600	2200	60	14″ Bar Mill	Coupled	1921	Universal Steel Co.	Bridgeville, Pa.	CW
745	700	730–490	4000	25	14″ Merchant Mill	Geared	1918	Atlas Steel Corporation	Dunkirk, N. Y.	W
746	700	735	4000	25	14″ Merchant Mill	Geared	1921	Atlas Steel Corporation	Dunkirk, N. Y.	W
747	700	735	440	25	Copper Rolling Mill	Geared	1924	Baltimore Cop.Smelt. & Rolling Co.	Baltimore, Md.	W
748	700	735	440	25	Copper Rolling Mill	Geared	1924	Baltimore Cop.Smelt. & Rolling Co.	Baltimore, Md.	W
749	700	735	440	25	Copper Rolling Mill	Geared	1924	Baltimore Cop.Smelt. & Rolling Co.	Baltimore, Md.	W
750	700	750	2200	25		Geared		Bethlehem Steel Company	Buffalo, N. Y.	AC
751	700	750	2200	25				Bethlehem Steel Company	Buffalo, N. Y.	AC
752	700	875	2200	60	Cont. Hoop (Rough). Mill	Geared	1920	Connors Steel Co.	Birmingham, Ala.	W
753	700	875	2200	60	Cont. Hoop (Intermed.)	Geared	1920	Connors Steel Co.	Birmingham, Ala.	W
754	700	880–530	2200	60	10″ Finishing Mill	Geared	1923	Crucible Steel Works of America, Park Works	Pittsburgh, Pa.	W
755	720	395–825	600	d.c.	10″ Strip Mill	Direct	1926	LacLede Steel Co.	Alton, Ill.	W
756	720	480–1000	600	d.c.	10″ Strip Mill	Direct	1926	LacLede Steel Co.	Alton, Ill.	W
757	750	94	2200	25	Sheet Mill	Rope	1912	West Penn. Steel Co.	Brackenridge, Pa.	GE
758	750	100	2200	25	Tin Mill, Cold Rolls	Geared	1915	American Sheet & Tin Plate Co.	Gary, Ind.	GE
759	750	100	2200	25	Tin Mill, Cold Rolls	Geared	1915	American Sheet & Tin Plate Co.	Gary, Ind.	GE
760	750	120–210	250	d.c.	14″ Finishing Mill	Coupled	1923	Pittsburgh Crucible Steel Co.	Midland, Pa.	AC
761	750	120–210	250	d.c.	14″ Finishing Mill	Coupled	1923	Pittsburgh Crucible Steel Co.	Midland, Pa.	AC
762	750	125	2200	25	Tin Mill, Cold Rolls	Rope	1915	McKeesport Tin Plate Co.	McKeesport, Pa.	GE
763	750	125	2200	25	Tin Mill, Cold Rolls	Rope	1915	McKeesport Tin Plate Co.	McKeesport, Pa.	GE
764	750	130	550	d.c.	Wheel Mill	Direct	1915	Carnegie Steel Co.	McKees Rocks, Pa.	GE
765	750	150–250	600	d.c.	14″ Merchant Mill	Direct	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
766	750	160	550	d.c.	Wheel Mill	Direct	1916	Edgewater Steel Co.	Oakmont, Pa.	GE
767	750	160	550	d.c.	Wheel Mill	Direct	1916	Edgewater Steel Co.	Oakmont, Pa.	GE
768	750	160	550	d.c.	Wheel Mill	Direct	1919	Edgewater Steel Co.	Oakmont, Pa.	GE
769	750	190–375	245	d.c.	Pontoon Mill	Coupled	1927	M. W. Kellog Co.	Jersey City, N. J.	CW
770	750	190–375	245	d.c.	Pontoon Mill	Coupled	1927	M. W. Kellog Co.	Jersey City, N. J.	CW
771	750	200–600	600	d.c.	10″ Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, Ohio	W
772	750	200–600	600	d.c.	Merchant Mill	Geared	1928	American Steel & Wire Co.	Cleveland, Ohio	W
773	750	225–500	250	d.c.	12″ Hoop Mill	Direct	1928	Carnegie Steel Co.	Youngstown, Ohio	W
774	750	225–500	250	d.c.	12″ Hoop Mill	Direct	1928	Carnegie Steel Co.	Youngstown, O.	W
775	750–750	225–168	440	60	Bar Mill	Coupled	1921	Simmons Mfg. Co.	Kenosha, Wis.	AC
776	750–750	235–325	230	d.c.	Piercing Mill	Geared	1914	Pittsburgh Seamless Tube Co.	Beaver Falls, Pa.	GE
777	750	240	2200	60	Sheet Mill, Cold Rolls	Geared	1919	Wheeling Steel Corp.	Stuebenville, Ohio	GE
778	750	250	2200	25	Bar Mill	Geared	1914	Bethlehem Steel Co.	Johnstown, Pa.	AC
779	750	250	2200	60	Tin Mill	Geared	1915	Weirton Steel Co.	Weirton, W. Va.	W
780	750	250	440	25	Bar Mill	Coupled	1920	Simonds Mfg. Co.	Lockport, N. Y.	AC
781	750	257	2200	60	10″ Strip Mill	Coupled	1923	Pittsburgh Steel Co.	Glassport, Pa.	CW
782	750	277	2200	60	18″ Merchant Mill	Geared	1915	Pacific Coast Steel Co.	San Francisco, Cal.	GE
783	750	295	6600	25	Seamless Mill	Geared	1923	Gary Tube Company	Gary, Ind.	W
784	750	300–600	230	d.c.	Cold Rolling Mill	Geared	1924	International Nickel Co.	Huntington, W. Va.	AC
785	750	300–600	230	d.c.	Bliss Cold Roll Drive	Geared	1926	International Nickle Co.	Huntington, W. Va.	AC
786	750	353	2200	60	Tube Rolling Mill	Direct	1915	National Tube Co.	Ellwood City, Pa.	W
787	750	353	2200	60	Tube Rolling Mill	Direct	1915	National Tube Co.	Ellwood City, Pa.	W
788	750	353	2200	60	Tube Rolling Mill	Direct	1915	National Tube Co.	Ellwood City, Pa.	W
789	750	353	2200	60	Piercing Mill	Direct	1915	National Tube Co.	Ellwood City, Pa.	W
790	750	353	2200	60	Piercing Mill	Direct	1915	National Tube Co.	Ellwood City, Pa.	W
791	750	353	2200	60	Piercing Mill	Direct	1915	National Tube Co.	Ellwood City, Pa.	W
792	750	353	4600	60	Brass Mill	Geared	1924	Scoville Mfg. Co.	Waterbury, Conn.	W
793	750–625–460	460–300–220	6600	25	12″ Hot Strip Mill	Direct	1920	Illinois Steel Co.	Gary, Ind.	GE
794	750	360	4600	60			1921	Detroit Copper & Brass Co.	Detroit, Mich.	AC
795	750–750	360–860	600	d.c.	14″ Continuous Mill	Geared	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
796	750	360–600	250	d.c.	10″ Merchant Mill	Direct	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
797	750	375	2200	25	10″ Aluminum Rod Mill	Geared	1926	U. S. Aluminum Co.	Massena, N. Y.	GE
798	750	443	4600	60		Coupled	1921	Detroit Copper & Brass Co.	Detroit, Mich.	AC
799	750–600–440	473–375–278	6600	25	12″ Hot Strip Mill	Direct	1920	Illinois Steel Co.	Gary, Ind.	GE
800	750	500	230	d.c.	14″ Rail Rerolling Mill	Geared	1925	Ford Motor Co.	River Rouge, Mich.	AC
801	750	505	2200	60		Geared	1924	Kansas City Bolt & Nut Co.	Kansas City, Mo.	AC
802	750	514	2200	60	Wire Red Mill	Geared	1917	Kokomo Steel & Wire Co.	Kokomo, Ind.	AC
803	750	514	440	60	14″ Merchant Mill	Geared	1920	Witherow Steel Co.	Neville Island, Pa.	AC
804	750	514	550	60	10″ and 9″ Copper Mills	Geared	1919	American Brass Co.	Hastings, N. Y.	GE
805	750	514	550	60	10″ and 9″ Copper Mills	Geared	1919	American Brass Co.	Hastings, N. Y.	GE
806	750	514	2200	60	Merchant Mill	Geared	1920	W. M. Lewis	Indianapolis, Ind.	AC
807	750	600	4000	60	Brass Mill	Geared	1919	Bristol Brass Co.	Bristol, Conn.	GE
808	750	720	2200	60	Zinc Rolling Mill	Geared	1923	American Zinc Products Co.	Greencastle, Ind.	GE
809	750	720	550	60	Brass Rolling Mill	Geared	1925	American Brass Co.	Ansonia, Conn.	GE
810	770–700–630	540–490–440	6600	25	Hoop Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	W
811	800	20	230	d.c.	32″ x 48″ Plate Mill	Coupled	1910	American Sheet & Tin Plate Co.	Gary, Ind.	CW
812	800	20	230	d.c.	32″ x 48″ Plate Mill	Coupled	1910	American Sheet & Tin Plate Co.	Gary, Ind.	CW
813	800	0–37–70	500	d.c.	Plate Mill	Coupled	1919	Universal Rolling Mill Co.	Bridgeville, Pa.	AC
814	800	94	2200	25	18″ Merchant Mill	Direct	1912	Gulf States Steel Co.	Birmingham, Ala.	GE
815	800	100	6600	25	16″ Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
816	800	107	6600	25	Tube Rolling Mill	Coupled	1925	National Tube Co.	Lorain, Ohio	AC
817	800	109	2200	60	2-21″ Rolls	Coupled	1924	Globe Steel Tube Co.	Milwaukee, Wis.	AC
818	800	140–510	600	d.c.	10″ Rod Mill	Direct	1927	American Steel & Wire Co.	Worcester, Mass.	W
819	800	140–510	600	d.c.	10″ Rod Mill	Direct	1927	American Steel & Wire Co.	Worcester, Mass.	W
820	800	163	2200	25	22″ Merchant Blooming	Rope	1905	Ontario Iron & Steel Co.	Welland, Ont.	W

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
821	800	175–350	600	d.c.	12″ Alloy Bar Mill	Direct	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
822	800	175–350	600	d.c.	12″ Alloy Bar Mill	Direct	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
823	800	175–350	600	d.c.	12″ Alloy Bar Mill	Direct	1927	Illinois Steel Co.	S. Chicago, Ill.	GE
824	800	189	2200	60	Merchant Mill	Direct	1925	Pacific Coast Steel Co.	San Francisco, Cal.	CW
825	800	200–300	500	d.c.	Piercing Mill	Rope	1913	Pittsburgh Steel Products Co	Monessen, Pa.	W
826	800	200–300	500	d.c.	Piercing Mill	Direct	1912	Pittsburgh Steel Products Co.	Monessen, Pa.	W
827	800–800	200–400	600	d.c.	14″ Hot Strip Mill	Direct	1920	Trumbull Steel Co.	Warren, Ohio	GE
828	800	200–400	250	d.c.	9″ 7 Stand Mill	Coupled	1926	Crucible Steel Co. of America	Harrison, N. J.	AC
829	800	200–415	600	d.c.	12″ Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	GE
830	800	200–415	600	d.c.	12″ Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	GE
831	800	200–415	600	d.c.	12″ Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	GE
832	800	200–600	500	d.c.	10″ Merchant Rod & Strip Mill	Geared	1927	Ford Motor Co.	Detroit, Mich.	W
833	800–800	214–167	6600	25	16″ Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
834	800	214	2200	25	Sheet Mill	Geared	1919	American Sheet & Tin Plate Co.	Gary, Ind.	GE
835	800	214	2200	25	Sheet Mill	Geared	1919	American Sheet & Tin Plate Co.	Gary, Ind.	GE
836	800	220–150	2200	25	12″ Bar (Finishing) Mill	Direct	1919	Scullin Steel Co.	St. Louis, Mo.	W
837	800	220–440	600	d.c.	12″ Alloy Bar Mill	Direct	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
838	800	220–440	600	d.c.	12″ Alloy Bar Mill	Direct	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
839	800	220–440	600	d.c.	12″ Alloy Bar Mill	Direct	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
840	800	225	2200	60	Roughing Mill	Geared	1916	Standard Seamless Tube Co.	Economy, Pa.	GE
841	800–800	231–462	600	d.c.	14″ Hot Strip Mill	Direct	1920	Trumbull Steel Co.	Warren, Ohio	GE
842	800	240–480	600	d.c.	12″ Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	GE
843	800	240–500	600	d.c.	Rod Mill	Direct	1928	Sheffield Steel Corp.	Kansas City, Mo.	W
844	800	250–500	230	d.c.	14″ and 9″ Hoop Mill	Direct	1914	Sharon Steel Hoop Co.	Sharon, Pa.	W
845	800	250	2200	60	Piercing Mill	Geared	1915	Timken Roller Bearing Co.	Canton, Ohio	W
846	800	250	2200	60	22″ Bar Mill	Rope	1915	Timken Roller Bearing Co.	Canton, Ohio	W
847	800	250–750	600	d.c.	14″ Hot Strip Mill	Direct	1927	Trumbull Steel Co	Warren, Ohio	GE
848	800–800	256–512	600	d.c.	14″ Hot Strip Mill	Direct	1920	Trumbull Steel Co.	Warren, Ohio	GE
849	800	257	2200	60	Bar Mill	Geared	1914	Standard Seamless Tube Co.	Economy, Pa.	GE
850	800	257	2200	60	12″ Rod Mill	Belt	1915	Crucible Steel Co. of America	Harrison, N. J.	GE
851	800	257	2200	60	Hot Strip Mill	Geared	1926	Standard Seamless Tube Co.	Economy, Pa.	GE
852	800	268	2200	60	14″–10″ Merchant Mill	Rope	1912	United Alloy Steel Corporation	Canton, Ohio	W
853	800–800	275–550	600	d.c.	14″ Hot Strip Mill	Direct	1920	Trumbull Steel Co.	Warren, Ohio	GE
854	800	275–550	700	d.c.	12″ Merchant Mill	Geared	1925	Penn Seaboard Steel Co.	New Castle, Del.	GE
855	800	275–550	700	d.c.	12″ Merchant Mill	Geared	1925	Penn Seaboard Steel Co.	New Castle, Del.	GE
856	800	275–550	700	d.c.	9″ Merchant Mill	Direct	1925	Penn Seaboard Steel Co.	New Castle, Del.	GE
857	800	277	2200	60	Bar Mill	Geared	1918	Pacific Coast Steel Co.	San Francisco, Calif.	AC
858	800	292	2200	25	18″ Tandem Billet Mill	Direct	1912	Laclede Steel Co.	Alton, Ill.	W
859	800	300	2200	60				Pittsburgh Steel Prod. Co.	Monessen, Pa.	AC
860	800	300	2300	60	10″ Merchant Mill	Geared	1928	Laclede Steel Co.	Madison, Ill.	GE
861	800–800	315–210	575	d.c.	6″ Hot Strip Mill	Direct	1907	American Steel & Wire Co.	Cleveland, Ohio	GE
862	800	320	440	60	9″ Merchant Mill	Belted	1914	Carnegie Steel Co. Painter Mills	Pittsburgh, Pa.	W
863	800	320	440	60	10″ Merchant Mill	Belted	1914	Carnegie Steel Co. Painter Mills	Pittsburgh, Pa.	W
864	800	350	2200	60	24″ Bull Head Rolls of Sheet Bar Mill	Geared	1915	Central Steel Co.	Massillon, Ohio	W
865	800	350	2200	60	Billet Mill	Geared	1915	Milton Manufacturing Co.	Milton, Pa.	W
866	800	350	2200	60	Aluminum Mill	Geared	1915	U. S. Aluminum Co.	Edgewater, N. J.	W
867	800	350–600	230	d.c.	Band Mill	Direct	1926	Sharon Steel Hoop Co.	Sharon, Pa.	CW
868	800	350–600	230	d.c.	Band Mill	Direct	1926	Sharon Steel Hoop Co.	Sharon, Pa.	CW
869	800	350–700	600	d.c.	20″ Merchant Breakd'wn)	Geared	1921	Driver Harris	Harrison, N. J.	W
870	800	350–750	600	d.c.	8″ Cont. Merchant Mill	Direct	1925	Inland Steel Co.	Indiana Harbor, Ind.	GE
871	800	350–790	600	d.c.	13″ Skelp Mill	Geared	1928	National Tube Co.	McKeesport, Pa.	GE
872	800	350–790	600	d.c.	13″ Skelp Mill	Geared	1928	National Tube Co.	McKeesport, Pa.	GE
873	800	353	2200	60	12″–5 Stand Merch. Mill	Belt	1924	United Steel Company	Everett, Wash.	W
874	800	353	440	50	8″ Copper Rod Mill	Direct	1923	Standard Underground Cable Co.	St. Louis, Mo.	W
875	800–400	360–180	550	60	Bar Mill	Geared	1926	Ludlum Steel Co.	Watervliet, N. Y.	GE
876	800–400	360–180	550	60	Bar Mill	Geared	1926	Ludlum Steel Col.	Warervliet, N. Y.	GE
877	800	360–440	500	d.c.	Aluminum Mill	Geared	1919	U. S. Aluminum Co.	Marysville, Tenn.	W
878	800	360–440	500	d.c.	Aluminum Mill	Geared	1919	U. S. Aluminum Co.	Marysville, Tenn.	W
879	800	367	2200	25	8″ Merchant Mill	Direct	1918	Donner Steel Co.	Buffalo, N. Y.	W
880	800	370	650	d.c.	Aluminum Mill	Direct	1917	U. S. Aluminum Co.	Niagara Falls, N. Y.	W
881	800	370–400	650	d.c.	Aluminum Mill	Direct	1919	U. S. Aluminum Co.	Niagara Falls, N. Y.	W
882	800	375	2200	25	Sheet Mill, Cold Rolls	Geared	1919	Eastern Rolling Mills Co.	Baltimore, Md.	GE
883	800	375	2200	25	Merchant Mill	Geared	1920	Bethlehem Steel Co.	Johnstown, Pa.	GE
884	800–800	390–260	575	d.c.	6″ Hot Strip Mill	Direct	1907	American Steel & Wire Co.	Cleveland, Ohio	GE
885	800	400–600	600	d.c.	16″ Merchant Mill	Geared	1921	Missouri Rolling Mills Co.	St. Louis, Mo.	W
886	800	400–800	600	d.c.	Rod & Merchant Mill	Geared	1928	Atlantic Steel Co.	Atlanta, Ga.	GE
887	800	410–720	230	d.c.	16″ Merchant (Rough.)	Geared	1923	Timken Roller Bearing Co.	Canton, Ohio	W
888	800	425–875	250	d.c.	12″ Hoop Mill	Direct	1928	Carnegie Steel Co.	Youngstown, Ohio	W
889	800	425–875	250	d.c.	12″ Hoop Mill	Direct	1928	Carnegie Steel Co.	Youngstown, Ohio	W
890	800	435	2200	60	No. 2 Hoop Mill	Geared	1925	Connors Steel Co.	Birmingham, Ala.	W
891	800	440	2200	60	18″ Merchant (Finishing)	Geared	1918	Canton Sheet Steel Co.	Canton, Ohio	W
892	800	443	2200	60	Roughing Mill	Coupled	1921	International Nickel Co.	Huntington, W. Va.	AC
893	800	443	2200	60	Copper Mill	Geared	1928	American Brass Co.	Kenosha, Wis.	AC
894	800	450	2200	60	14″ Merchant Mill	Geared	1921	International Nickel Co.	Huntington, W. Va.	AC
895	800	450	2200	60	Wire Rod Mill	Coupled	1919	Black Steel & Wire Co.	Kansas City, Mo.	AC
896	800–400	450–225	2200	60	Copper Mill	Direct	1925	Anaconda Copper Mining Co.	Montana	GE
897	800	450	2200	60	8″ Strip Mill	Direct	1928	Superior Steel Corporation	Carnegie, Pa.	W
898	800	469–750	600	d.c.	Wire Rod Mill	Geared	1928	John A. Roebling's Sons	Trenton, N. J.	GE
899	800	469–750	600	d.c.	Wire Rod Mill	Geared	1928	John A. Roebling's Sons	Trenton, N. J.	GE
900	800	505	2200	60	9″ Hot Strip Mill	Direct	1926	West Leechburg Steel Co.	West Leechburg, Pa.	W
901	800	505	6600	60	Bar Plate Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
902	800	505	6600	60	Bar Plate Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
903	800	510–870	250	d.c.	10″ Merchant Mill	Direct	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
904	800	514	2200	60	Bar Mill	Geared	1919	Judson Mfg. Co.	Oakland, Calif.	AC
905	800	535–750	600	d.c.	10″ Wire Rod Mill	Geared	1926	American Steel & Wire Co.	Worcester, Mass.	W
906	800	535–750	600	d.c.	10″ Wire Rod Mill	Geared	1926	American Steel & Wire Co.	Worcester, Mass.	W
907	800	585–292	6600	60	16″ Hoop and Band Mill	Geared	1915	Weirton Steel Co.	Weirton, W. Va.	W
908	800	600	2200	60	Hot & Cold Sheet Mill	Geared	1924	American Nickel Co.	Clearfield, Pa.	GE
909	800	705	2200	60	12″ Merchant Mill	Geared	1919	McConway-Torley Co.	Pittsburgh, Pa.	W
910	800–363	706–320	600	d.c.	10″ Rod Mill	Geared	1922	Wheeling Steel Corp.	Portsmouth, Ohio	GE
911	800–363	706–320	600	d.c.	10″ Rod Mill	Geared	1922	Wheeling Steel Corp.	Portsmouth, Ohio	GE
912	800–363	706–320	600	d.c.	10″ Rod Mill	Geared	1922	Wheeling Steel Corp.	Portsmouth, Ohio	GE
913	800	720	4600	60	Rolling Mill	Geared	1925	Mich. Copper & Brass Co.	Detroit, Mich.	AC
914	800	720	4600	60	Rolling Mill	Geared	1925	Mich. Copper & Brass Co.	Detroit, Mich.	AC
915	800	720	4600	60	Rolling Mill	Geared	1925	Mich. Copper & Brass Co.	Detroit, Mich.	AC
916	800	720	4600	60	Rolling Mill	Geared	1925	Mich. Copper & Brass Co.	Detroit, Mich.	AC
917	800	720	4600	60	Rolling Mill	Geared	1925	Mich. Copper & Brass Co.	Detroit, Mich.	AC
918	800–800–800	720–600–480	2200	60	3-High Blooming Mill	Geared	1927	Copperweld Steel Co.	Glassport, Pa.	GE
919	800	730–365	2200	50	22″ Bar Mill	Geared	1916	Columbia Steel Co.	Los Angeles, Cal.	W
920	800	730–365	2200	50	12″ Merchant Mill	Geared	1916	Columbia Steel Co.	Los Angeles, Cal.	W
921	800	730–485	2200	50	12″ Merchant Mill	Geared	1919	Southern Calif. Iron & Steel Co.	Los Angeles, Cal.	W
922	800	760–1050	250	d.c.	10″ Merchant Mill	Direct	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
923	800	870	2200	60	Copper Rod Mill	Geared	1923	American Brass Company	Kenosha, Wis.	W
924	800	870	2200	60	Copper Rod Mill	Geared	1923	American Brass Company	Kenosha, Wis.	W
925	800	875–700	2200	60	16″ Merchant Mill	Geared	1920	Kansas City Bolt & Nut Co.	Kansas City, Mo.	W
926	800	880–490	2200	60	Bar Mill	Geared	1920	Knoxville Iron Co.	Knoxville, Tenn.	W
927	800	892–623	2200	60	20″ Merchant (Finishing)	Geared	1919	Hoosier Rolling Mills Co.	Terre Haute, Ind.	W
928	800	900	440	60	Copper Rod Mill	Geared	1920	Western Electric Co.	Hawthorne, Ill.	GE
929	800–800	900–720	2200	60	9″ Merchant Mill	Geared	1923	Knoxville Iron Co.	Knoxville, Tenn.	GE

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
930	800-800	900-720	2200	60	9″ Merchant Mill	Geared	1923	Knoxville Iron Co.	Knoxville, Tenn.	GE
931	840-700-560	360-300-240	6600	25	9″ Merchant Mill	Direct	1925	Bethlehem Steel Co.	Bethlehem, Pa.	GE
932	850-570	214-143	6600	25	Merchant Mill	Direct	1920	Illinois Steel Co.	Gary, Ind.	GE
933	850-850	214-187	6600	25	10″ Merchant Mill	Rope	1916	Illinois Steel Co.	Gary, Ind.	GE
934	850-850	214-187	6600	25	10″ Merchant Mill	Rope	1916	Illinois Steel Co.	Gary, Ind.	GE
935	850	250-500	250	d.c.	10″ Rod Mill	Direct	1927	Washburn Wire Co.	Phillipsdale, R. I.	W
936	850	514	2200	60	14″ Merchant Mill	Geared	1927	Copperweld Steel Co.	Glassport, Pa.	W
937	850	505	2200	60	24″ Bar (Roughing) Mill	Geared	1919	Central Steel Co.	Massillon, Ohio	W
938	850	710	2200	60	20″ Blooming Mill	Geared	1923	Washburn Wire Co.	Phillipsdale, R. I.	W
939	900	94	2200	25	Jobbing Sheet Mill	Rope	1910	American Sheet & Tin Plate Co.	Gary, Ind.	GE
940	900	94	2200	25	Jobbing Sheet Mill	Rope	1910	American Sheet & Tin Plate Co.	Gary, Ind.	GE
941	900	150-300	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
942	900	163	2200	60	Wire Rod Mill	Coupled	1917	Kokomo Steel & Wire Co.	Kokomo, Ind.	AC
943	900	163	2200	60	Wire Rod Mill	Rope	1919	Black Steel & Wire Co.	Kansas City, Mo.	AC
944	900-720	200-160	220	d.c.	Wheel Mill	Geared	1906	Bethlehem Steel Co.	Johnstown, Pa.	GE
945	900-900	214-150	2200	25	12″ Merchant Mill	Direct	1910	Algoma Steel Co.	Sault Ste. Marie,Can	GE
946	900-710-620	325-257-182	2300	60	10″ Hoop Mill	Geared	1918	Acme Steel Goods Co.	Riverdale, Ill.	GE
947	900	425-640	250	d.c.	12-10″ Mill	Coupled	1925	Bethlehem Steel Co.	Johnstown, Pa.	AC
948	900	900	440	60	Copper Rod Mill	Geared	1920	Western Electric Co.	Hawthorne, Ill.	GE
949	975-375	650-250	600	d.c.	Rod (Roughing) Mill	Geared	1922	Atlantic Steel Co.	Atlanta, Ga.	W
950	975-510	865-450	600	d.c.	Rod (Finishing) Mill	Direct & Belt	1922	Atlantic Steel Co.	Atlanta, Ga.	W
951	1000	40-60	270	d.c.	28″ Rev. Copper Mill	Direct	1927	Rome Brass & Copper Co.	Rome, N. Y.	GE
952	1000	50-100	600	d.c.	24″ Billet (Roughing)	Direct	1916	American Steel & Wire Co.	Cleveland, Ohio	W
953	1000	50-175	600	d.c.	24″ Mill	Direct	1916	Central Steel Co.	Massillon, Ohio	W
954	1000	83	2200	25	Sheet Mill	Rope	1910	Follansbee Bros.	Follansbee, W. Va.	GE
955	1000	125	230	d.c.	Sheet Bar Mill	Geared	1920	Allegheny Steel Co.	Brackenridge, Pa.	GE
956	1000	133	2200	25	Structural (Finishing)	Direct	1910	Illinois Steel Co.	South Chicago, Ill.	W
957	1000	137	6660	25	Wheel Mill	Geared	1916	Illinois Steel Co.	Gary, Ind.	AC
958	1000	145-327	600	d.c.	13″ Skelp Mill	Direct	1928	National Tube Co.	McKeesport, Pa.	GE
959	1000	184	2200	25	16″ Merchant Mill	Direct	1908	Bethlehem Steel Co.	Johnstown, Pa.	W
960	1000	189-½	2200	60	Wire Mill	Direct	1928	American Steel & Wire Co.	Cleveland, Ohio	W
961	1000	190-427	600	d.c.	13″ Skelp Mill	Direct	1928	National Tube Co.	McKeesport, Pa.	GE
962	1000	200-600	600	d.c.	10″ Merchant Mill	Geared	1925	McKinney Steel Co.	Cleveland, Ohio	W
963	1000	200-480	250	d.c.	12-9″ Mill	Geared	1925	Bethlehem Steel Co.	Johnstown, Pa.	AC
964	1000	200-480	250	d.c.	12-9″ Mill	Geared	1925	Bethlehem Steel Co.	Johnstown, Pa.	AC
965	1000-2000	200-400-600	250	d.c.	12-10″ Gautier Mill	Geared	1925	Bethlehem Steel Co.	Johnstown, Pa.	AC
966	1000	209	6600	25	14″ Cont. Skelp Mill	Coupled	1924	Gary Tube Co.	Gary, Ind.	AC
967	1000	210-510	230	d.c.	Bar Mill	Geared	1925	Donner Steel Co.	Buffalo, N. Y.	W
968	1000	214-150	6400	25	24″ Flat (Finishing) Mill	Direct	1916	American Steel & Wire Co.	Cleveland, Ohio	W
969	1000	225-168	4000	60	Rail Rerolling Mill	Direct	1926	Inland Steel Co.	Indiana Harbor, Ind.	GE
970	1000	225-168	4000	60	Rail Rerolling Mill	Direct	1926	Inland Steel Co.	Indiana Harbor, Ind.	GE
971	1000	225	2300	60	Rail Mill	Geared	1928	West Virginia Rail Co.	Huntington, W. Va.	AC
972	1000	235	2200	60	Cold Rolled Tin Mill	Coupled	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	AC
973	1000	235	2200	60	Cold Rolled Tin Mill	Coupled	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	AC
974	1000	240	440	60	Sheet Mill	Geared	1918	Robertson Iron & Steel Co.	Springfield, Ohio	AC
975	1000	240	220	60	Tube Mill	Geared	1919	Globe Seamless Tube Co.	Milwaukee, Wis.	AC
976	1000	240	2200	60	Tube Mill	Rope & Direct	1917	Pittsburgh Seamless Tube Co.	Beaver Falls, Pa.	CW
977	1000	235	2200	60	Cold Tin Mill	Geared	1928	Columbia Steel Co.	Pittsburgh, Cal.	W
978	1000	245	2200	25	30″ Sheet Jobbing Mill	Rope	1910	American Rolling Mills Co.	Middletown, Ohio	W
979	1000	250	6600	25	Tin Mill	Geared	1919	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
980	1000	250	6600	25	Tin Mill	Geared	1919	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
981	1000	250	6600	25	Sheet Mill	Geared	1919	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
982	1000	250	6600	25	Sheet Mill	Geared	1919	Bethlehem Steel Co.	Sparrows Point, Md.	GE
983	1000	250	2200	60	18″ Merchant Mill	Geared	1918	Canton Sheet Steel Co.	Canton, Ohio	W
984	1000	250	2200	60	Sheet Mill	Geared	1920	American Rolling Mills Co.	Zanesville, Ohio	W
985	1000	250	2200	25	Sheet Mill	Geared	1920	Otis Steel Co.	Cleveland, Ohio	AC
986	1000	250	2200	25	Sheet Mill	Geared	1920	Otis Steel Co.	Cleveland, Ohio	AC
987	1000-400	257-128	550	60	9″ Bar Mill No. 1	Geared	1926	Ludlum Steel Co.	Watervliet, N. Y.	GE
988	1000	277	2200	60	Strip Mill	Geared	1919	American Tube & Stamping Co.	Bridgeport, Conn.	GE
989	1000	290-500	600	d.c.	9″ Merchant Mill	Geared	1926	Illinois Steel Co.	Gary, Indiana	GE
990	1000	292	6600	25	9″ Bar Mill	Direct	1928	Bethlehem Steel Co.	Johnstown, Pa.	W
991	1000	293	6600	25	14″ Cont. Skelp Mill	Geared	1924	Gary Tube Co.	Gary, Ind.	AC
992	1000	295	2200	60	12″ Cont. & 10″ Merch.	Direct	1920	Kansas City Bolt & Nut Co.	Kansas City, Mo.	W
993	1000	300	2200	25	10″ Merchant Mill	Geared	1916	Halcomb Steel Co.	Syracuse, N. Y.	GE
994	1000	300-150	2200	60	12″ Merchant Mill	Direct	1918	Central Steel Co.	Massillon, Ohio	W
995	1000	300	2200	60	Sheet Mill	Geared	1919	Superior Sheet Steel Co.	Canton, Ohio	GE
996	1000	300	2200	60	Sheet Mill	Geared	1919	Superior Sheet Steel Co.	Canton, Ohio	GE
997	1000	300	2200	60	Sheet Mill	Geared	1920	Milwaukee Rolling Mills Co.	Milwaukee, Wis.	GE
998	1000	300	2200	60	Sheet Mill	Geared	1920	Milwaukee Rolling Mills Co.	Milwaukee, Wis.	GE
999	1000	300	2200	25	Aluminum Rod Mill	Geared	1922	U. S. Aluminum Co.	Massena, N. Y.	GE
1000	1000	300-400	230	d.c.	Lap Welding Mill	Coupled	1923	Gary Tube Co.	Gary, Ind.	AC
1001	1000	300	2200	60	Sheet Mill	Geared	1925	Sharon Steel Hoop Co.	Sharon, Pa.	CW
1002	1000	300	2200	60	Sheet Mill	Geared	1925	Sharon Steel Hoop Co.	Sharon, Pa.	CW
1003	1000	300	2200	60	Sheet Mill	Geared	1925	Sharon Steel Hoop Co.	Sharon, Pa.	CW
1004	1000	333	2200	50	36″ Sheet Mill	Geared	1927	Columbia Steel Co.	Torrance, Calif.	GE
1005	1000	350-700	600	d.c.	12″ Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
1006	1000	350-700	600	d.c.	12″ Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
1007	1000	350-700	600	d.c.	12″ Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
1008	1000	350-700	600	d.c.	12″ Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
1009	1000	350-700	600	d.c.	12″ Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
1010	1000	360	2200	60			1921	Tennessee Coal, Iron & R. R. Co.	Birmingham, Ala.	AC
1011	1000	365	2200	50	Merchant Mill	Geared	1923	Columbia Steel Co.	Torrence, Cal.	W
1012	1000	375	2200	25	Bar Mill	Geared	1913	Bethlehem Steel Co.	Johnstown, Pa.	AC
1013	1000	375	2200	25	Wheel Mill	Geared	1913	Bethlehem Steel Co.	Johnstown, Pa.	AC
1014	1000	375	6600	25	Piercing Mill	Geared	1925	National Tube Co.	Lorain, Ohio	AC
1015	1000	375	4400	25	Merchant Mill	Geared	1919	Buffalo Bolt Co.	N. Tonawanda, N. Y.	GE
1016	1000	375	2200	25	54″ Plate Mill	Geared	1927	Alan Wood Iron & Steel Co.	Conshohocken, Pa.	GE
1017	1000	375	6600	25	Tube Mill	Geared	1928	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
1018	1000	400-800	230	d.c.	10″ Merchant Mill	Geared	1928	Bourne Fuller Co.	Cleveland, Ohio	GE
1019	1000	435	2200	60	Hot Strip Mill	Geared	1924	American Tube & Stamping Co.	Bridgeport, Conn.	W
1020	1000	435	2200	60	Hot Strip Mill	Geared	1924	American Tube & Stamping Co.	Bridgeport, Conn.	W
1021	1000	450	2200	60	Piercing Mill	Geared	1918	Winchester Rep. Arms Co.	New Haven, Conn.	AC
1022	1000	450	2200	60	Bar Mill	Rope	1919	Pacific Coast Steel Co.	Seattle, Wash.	AC
1023	1000	450	2200	60	20″ Merchant Mill	Geared	1921	International Nickel Co.	Huntington, W. Va.	AC
1024	1000	450-900	600	d.c.	10″ Merchant Mill	Geared	1928	Steel Co. of Canada	Hamilton, Ont.	W
1025	1000	518-800	250	d.c.	20″ Merchant Mill	Geared	1919	National Farming Machinery, Ltd	Montmagny, P. Q.	W
1026	1000	585	6600	60	Bar Plate Mill	Geared	1927	American Rolling Mill	Middletown, Ohio	W
1027	1000	590-495	6600	60	24″ Structural Mill	Geared	1917	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	W
1028	1000	590-450	4000	60	14″ Merchant Mill	Geared	1920	Calumet Steel Co.	Chicago, Ill.	W
1029	1000	590-450	4000	60	14″ Merchant Mill	Geared	1920	Calumet Steel Co.	Chicago, Ill.	W
1030	1000	600	2200	60	16″ Skelp Mill	Geared	1923	Elyria Iron & Steel Co.	Elyria, Ohio	GE
1031	1000	600	2300	60	Copper Mill	Geared	1925	American Copper Products Co.	Elizabeth, N. J.	GE
1032	1000	600	2200	60	Hot and Cold Sheet Mills	Geared	1925	American Nickel Corp.	Clearfield, Pa.	GE
1033	1000	705	2200	60	16″ Strip Mill	Geared	1920	Central Steel Co.	Massillon, Ohio	W
1034	1000	720	4000	60	18″ 2-Stand Rerolling Rail Mill	Geared	1923	Buckeye Rolling Mill Co.	Newark, Ohio	GE
1035	1000	710	2200	60	20″ Special Bar Mill	Geared	1925	Rail Joint Company	Troy, N. Y.	W
1036	1000	710	2200	60	20″ Special Bar Mill	Geared	1925	Rail Joint Company	Troy, N. Y.	W
1037	1000	720	6600	60	Rod Mills Nos. 8 and 9	Geared	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1038	1000	720	6600	60	Rod Mill No. 7	Geared	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
1039	1000	725	2200	25	12" Merchant Mill	Geared	1922	Burlington Steel Co., Ltd.	Hamilton, Ont.	W
1040	1000	885	2200	60	Rail Re-rolling	Geared	1928	Danville Structural Co.	Danville, Ky.	W
1041	1100-1500	91	2200	25	84" Plate (Fin.) Mill	Direct	1909	American Sheet & Tin Plate Co	Gary, Ind.	W
1042	1100	214-320	600	d.c.	12" Skelp Mill	Direct	1926	Bethlehem Steel Co.	Sparrows Pt., Md.	W
1043	1100	240-382	600	d.c.	12" Skelp Mill	Direct	1926	Bethlehem Steel Co.	Sparrows Pt., Md.	W
1044	1100	294-205	2200	60	20" Merchant Mill	Rope	1912	United Alloy Steel Corporation	Canton, Ohio	W
1045	1125-900-675	312-250-187	6600	25	12" Strip Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	GE
1046	1150	250	6600	25	Jobbing Sheet Mill	Geared	1913	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
1047	1180-955-705	560-450-336	2200	60	Rod Mill	Belt	1916	Keystone Steel & Wire Co.	Peoria, Ill.	GE
1048	1190-875-525	350-250-150	2200	25	Merchant Mill	Direct-Rope	1925	Bethlehem Steel Co.	Lebanon, Pa.	GE
1049	1200	25-50	330	d.c.	Reversing Plate Mill	Direct	1926	Lukens Steel Co.	Coatesville, Pa.	GE
1050	1200	112.5	2200	60	Tube Mill	Geared	1928	Globe Steel Tube Co.	Milwaukee, Wis.	AC
1051	1200	125-275	600	d.c.	10" Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, Ohio	W
1052	1200-1200	150-250	230	d.c.	12" Merchant Mill	Direct	1920	Timken Roller Bearing Co.	Canton, Ohio	GE
1053	1200	160-320	250	d.c.	12" Merchant Mill	Direct	1926	Pittsburgh Crucible Steel Co.	Midland, Pa.	GE
1054	1200	200	2200	60	Piercing Mill	Rope	1919	Ohio Seamless Tube Co.	Shelby, Ohio	GE
1055	1200	200-400	230	d.c.	14" Band Mill	Direct	1926	Sharon Steel Hoop Co.	Sharon, Pa.	W
1056	1200	200-400	230	d.c.	14" Band Mill	Direct	1926	Sharon Steel Hoop Co.	Sharon, Pa.	W
1057	1200	214	2200	25	84" Plate Mill	Geared	1913	Otis Steel Co.	Cleveland, Ohio	GE
1058	1200	214	2200	25	Jobbing Sheet Mill	Geared	1913	Otis Steel Co.	Cleveland, Ohio	GE
1059	1200	240	440	25	26" Sheet Mill	Rope	1907	Seneca Iron & Steel Co.	Buffalo, N. Y.	W
1060	1200	240	2200	60	Sheet Mill	Geared	1915	Empire Rolling Mills	Cleveland, Ohio	GE
1061	1200	240	2200	60	Hot Sheet Mill	Coupled	1916	Standard Tin Plate Co.	Canonsburg, Pa.	CW
1062	1200	240	2200	60	Sheet Mill	Geared	1916	Mahoning Valley Steel Co	Niles, Ohio	GE
1063	1200	240	2200	60	Sheet Mill	Geared	1916	United Alloy Steel Corp.	Canton, Ohio	GE
1064	1200	240	2200	60	Sheet Mill	Geared	1917	United Alloy Steel Corp.	Canton, Ohio	GE
1065	1200	240	2200	60	Sheet Mill	Geared	1920	Republic Iron & Steel Co.	Youngstown, Ohio	GE
1066	1200	240	2200	60	Sheet Mill	Geared	1920	Republic Iron & Steel Co.	Youngstown, Ohio	GE
1067	1200	240	2200	60	Hot Sheet Mill	Coupled	1915	Standard Tin Plate Co.	Canonsburg, Pa.	CW
1068	1200	240	2200	60	Hot Sheet Mill	Coupled	1915	Standard Tin Plate Co.	Canonsburg, Oa.	CW
1069	1200	240	2200	60	Hot Sheet Mill	Coupled	1915	Standard Tin Plate Co.	Canonsburg, Pa.	CW
1070	1200	240	2200	60	Hot Sheet Mill	Coupled	1915	Standard Tin Plate Co.	Canonsburg, Pa.	CW
1071	1200	240	2200	60	Hot Sheet Mill	Coupled	1915	Standard Tin Plate Co.	Canonsburg, Pa.	CW
1072	1200	244	2200	25	Sheet Mill	Geared	1917	Bethlehem Steel Co.	Sparrows Pt., Md.	W
1073	1200	244	2200	25	Sheet Mill	Geared	1917	Bethlehem Steel Co.	Sparrows Pt., Md.	W
1074	1200	244	2200	25	Sheet Mill	Geared	1920	American Rolling Mills Co.	Middletown, Ohio	W
1075	1200	244	2200	25	Sheet Mill	Geared	1920	American Rolling Mills Co.	Middletown, Ohio	W
1076	1200	244	2200	25	Sheet Mill	Geared	1926	American Rolling Mills	Middletown, Ohio	W
1077	1200	244	2200	25	Sheet Mill	Geared	1926	American Rolling Mills	Middletown, Ohio	W
1078	1200	250-500	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
1079	1200	250-500	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
1080	1200	277	2200	60	Sheet Mill	Geared	1925	Wheeling Steel Corp.	Wheeling W. Va.	GE
1081	1200	257	4600	60	Tube Mill	Rope & Coupled	1918	Detroit Seamless Tube Co.	Detroit, Mich.	AC
1082	1200	292	2200	25	12" Continuous and 10" Merchant Mill	Direct & Rope	1912	Laclede Steel Co.	Alton, Ill.	W
1083	1200	294	2200	60	Tube Rolling Mill	Geared	1915	National Tube Co.	Ellwood City, Pa.	W
1084	1200	294	2200	60	Rolling Mill	Geared	1917	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind	W
1085	1200	295	6600	60	Sheet Mill	Coupled	1922	Weirton Steel Co.	Weirton, W. Va.	AC
1086	1200	295	6600	60	Sheet Mill	Coupled	1922	Weirton Steel Co.	Weirton, W. Va.	AC
1087	1200-1150-800	300-214-150	2200	25	Merchant Mill, No.10	Geared	1916	Bethlehem Steel Co.	Lackawanna, N.Y.	GE
1088	1200-1000-800	300-250-200	4400	25	14" Merchant Mill	Direct	1919	Buffalo Bolt Co.	N. Tonawanda, N. Y	GE
1089	1200	300	4100	50	Sheet Mill	Geared	1920	Chapman Price Steel Co.	Indianapolis, Ind.	GE
1090	1200	300	2200	60	Sheet Mill	Geared	1920	Central Steel Co.	Massillon, Ohio	GE
1091	1200	300	2200	60	Sheet Mill	Geared	1920	Central Steel Co.	Massillon, Ohio	GE
1092	1200	300	2200	60	Sheet Mill	Geared	1924	Thomas Sheet Steel Co.	Niles, Ohio	GE
1093	1200	300	2200	60	Sheet Mill	Geared	1924	Thomas Sheet Steel Co.	Niles, Ohio	GE
1094	1200	300-500	600	d.c.	10" Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	W
1095	1200	300-600	230	d.c.	12"-9" Merchant Mill	Geared	1928	Timken Roller Bearing Co.	Canton, Ohio	AC
1096	1200-1200-865	340-277-200	2200	60	11" Merchant Mill	Geared	1927	Bourne Fuller Co.	Cleveland, Ohio	GE
1097	1200	352	2200	60	Sheet Mill	Rope	1917	Mansfield Sheet & Tin Plate Co.	Mansfield, Ohio	W
1098	1200	360	2200	60	Morgan Wire Rod Mill	Geared	1918	Interstate Iron & Steel Co.	Chicago, Ill.	AC
1099	1200	360	2200	60	30" Sheet Mill	Geared	1921	International Nickel Co.	Huntington, W. Va.	AC
1100	1200	360	2200	60	24" Bar Mill	Geared	1921	International Nickel Co.	Huntington, W. Va.	AC
1101	1200	367	2200	25	Cold Rolling Mill	Geared	1917	Bethlehem Steel Co.	Sparrows Pt., Md.	W
1102	1200	368	2200	50	20" Merchant Mill	Geared	1919	Southern Calif. Iron & Steel Co.	Los Angeles, Cal.	W
1103	1200	375	440	25	Brass & Copper Mill	Geared	1928	American Smelting & Refining Co.	Baltimore, Md.	GE
1104	1200	400	650	d.c.	Aluminum Plate Mill	Geared	1915	Aluminum Company of America	Niagara Falls, N. Y.	GE
1105	1200-1000-800	450-375-300	6600	25	8" Hoop Mill, No. 8	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
1106	1200-1000-800	450-375-300	6600	25	8" Hoop Mill, No. 9	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
1107	1200-1000-800	450-375-300	6600	25	8" Bar Mill, No. 16	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
1108	1200-1200-1200	450-360-270	2300	60	9" Hot Strip Mill	Geared	1916	Trumbull Steel Co.	Warren, Ohio	GE
1109	1200-1200-1200	450-360-270	2300	60	9" Hot Strip Mill	Geared	1916	Trumbull Steel Co.	Warren, Ohio	GE
1110	1200-1200-1200	450-360-270	2300	60	9" Hot Strip Mill	Direct	1916	Trumbull Steel Co.	Warren, Ohio	GE
1111	1200-1000-800	450-375-300	6600	25	18" Band Mill, No. 13	Geared	1919	Carnegie Steel Co.	Youngstown, Ohio	GE
1112	1200	450	6600	60	Rail Mill Finishing Stand	Geared	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
1113	1200	485	6400	25	12" Merchant Mill	Geared	1916	American Steel & Wire Co.	Cleveland, Ohio	W
1114	1200	500	2200	25	28" Rail Mill	Geared	1914	Bethlehem Steel Co.	Steelton, Pa.	GE
1115	1200	500	2200	25	72" Jobbing Plate Mill	Geared	1926	Alan Wood Iron & Steel Co.	Coshocton, Pa.	GE
1116	1200	505-303	6600	60	16" Band Mill	Geared	1919	Weirton Steel Co.	Weirton, W. Va.	W
1117	1200	505	2200	60	29" Bar (Roughing) Mill	Geared	1922	Youngstown Steel Co.	Youngstown, Ohio	W
1118	1200	514	2200	60	Bar Mill	Geared	1917	Elyria Iron & Steel Co.	Elyria, Ohio	AC
1119	1200	514	2200	60	Wire Rod Mill	Geared	1917	Kokomo Steel & Wire Co.	Kokomo, Ind.	AC
1120	1200	514	2200	60	8" Merchant Mill	Geared	1928	Timken Roller Bearing Co.	Canton, Ohio	GE
1121	1200	520-575	230	d.c.	Rod Mill	Direct	1928	Gulf States Steel Co.	Alabama City, Ala.	W
1122	1200	590	2200	60	22" Strip Mill	Geared	1919	Harrisburg Pipe & Pipe Bending Co.	Harrisburg, Pa.	W
1123	1200	590	2200	60	24" Blooming Mill	Geared	1919	McConway-Torley Co.	Pittsburgh, Pa.	W
1124	1200	590-450	2200	60	Duo and Bull Head Mill	Geared	1916	Central Steel Co.	Massillon, Ohio	W
1125	1200	590-407	2200	60	20" Merchant (Roughing)	Geared	1918	Hoosier Rolling Mill Co.	Terre Haute, Ind.	W
1126	1200	705	6600	60	Bar Plate Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
1127	1250	103-253	600	d.c.	Strip Mill	Direct	1928	Sharon Steel Hoop Co.	Sharon, Pa.	GE
1128	1250	137-326	600	d.c.	Strip Mill	Direct	1928	Sharon Steel Hoop Co.	Sharon, Pa.	GE
1129	1250	175-413	600	d.c.	Strip Mill	Direct	1928	Sharon Steel Hoop Co.	Sharon, Pa.	GE
1130	1250	175-400	230	d.c.	Rod Mill	Direct	1915	United Alloy Steel Corporation	Canton, Ohio	W
1131	1250-1250	175-350	600	d.c.	14" Hot Strip Mill	Geared	1920	Trumbull Steel Co.	Warren, Ohio	GE
1132	1250-1250	175-350	600	d.c.	14" Hot Strip Mill	Geared	1920	Trumbull Steel Co.	Warren, Ohio	GE
1133	1250	200-500	600	d.c.	Strip Mill	Direct	1928	Sharon Steel Hoop Co.	Sharon, Pa.	GE
1134	1250	250-580	600	d.c.	Strip Mill	Direct	1928	Sharon Steel Hoop Co.	Sharon, Pa.	GE
1135	1250	250	6600	25	Hot Tin Mill	Geared	1924	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
1136	1250	250	6600	25	Hot Tin Mill	Geared	1924	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
1137	1250	250	6600	25	Cold Tin Mill	Geared	1924	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
1138	1250	250	6600	25	Sheet Mill	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	GE
1139	1250	250	6600	25	Hot Tin Mill	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	GE
1140	1250	250	6600	25	Hot Tin Mill	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md	GE
1141	1250	250	6600	25	Cold Tin Mill	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	GE
1142	1250	294	6600	25	14" Cont. Skelp Mill	Coupled	1924	Gary Tube Co.	Gary, Ind.	AC
1143	1250	300	6600	25	Steel Mill	Geared	1925	American Sheet & Tin Plate Co.	Wellsville, Ohio	AC
1144	1250	300-550	500	d.c.	10" Merchant Mill	Direct	1927	Ford Motor Co.	Detroit, Mich.	W
1145	1250	312-625	600	d.c.	Strip Mill	Direct	1928	Sharon Steel Hoop Co.	Sharon, Pa.	GE

No	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1146	1250	375	2080	25	18" Billet Mill	Geared	1918	Wickwire Spencer Steel Co.	Buffalo, N. Y.	GE
1147	1250	375	2080	25	18" Billet Mill	Geared	1918	Wickwire Spencer Steel Co.	Buffalo, N. Y.	GE
1148	1250	375	2200	25	Merchants Bar Mill	Geared	1919	Valley Steel Co.	Milwaukee, Wis.	AC
1149	1250-1000-650	650-500-325	2200	25	Rod Mill	Belt	1916	Wickwire Spencer Steel Co.	Buffalo, N. Y.	GE
1150	1250	712-430	6600	60	3 Stand 12" Mill	Coupled	1921	Tennessee Coal, Iron & R. R. Co.	Birmingham, Ala.	AC
1151	1300-900	214-140	2200	25	12" Merchant Mill	Direct	1912	Gulf States Steel Co.	Birmingham, Ala.	GE
1152	1300-1300	214-187	6600	25	10" Merchant Mill	Geared	1916	Illinois Steel Co.	Gary, Ind.	GE
1153	1300	257	6600	60	Rod Mill	Direct	1928	Gulf States Steel Co.	Alabama City, Ala.	W
1154	1300	360	2200	60	Wire Rod Mill	Coupled	1917	Kokomo Steel & Wire Co.	Kokomo, Ind.	AC
1155	1300	500	6600	25	Rod (Finishing) Mill	Rope	1912	American Steel & Wire Co.	Birmingham, Ala.	W
1156	1350-1000	214-161	4400	25	Rail Rerolling Mill	Direct	1926	Buffalo Steel Co.	Tonawanda, N. Y.	GE
1157	1350-1000	214-161	4400	25	Rail Rerolling Mill	Direct	1926	Buffalo Steel Co.	Tonawanda, N. Y.	GE
1158	1350	600	2300	60	Copper Mill	Geared	1918	American Brass Company	Waterbury, Conn.	GE
1159	1400	240	2200	60	Sheet Mill	Geared	1912	Apollo Steel Co.	Apollo, Pa.	GE
1160	1400	450-550	500	d.c.	12" Spring Mill	Coupled	1926	Ford Motor Co., Fordson Plant	Detroit, Mich.	AC
1161	1400	505	2200	60	14" Billet Mill	Geared	1917	Wickwire Spencer Steel Corp.	Palmer, Mass.	W
1162	1400-945	600-405	2200	60	21" Merchant Mill	Geared	1915	Bourne-Fuller Co.	Cleveland, Ohio	GE
1163	1500	50-80	600	d.c.	Cont. Merchant Mill	Direct	1925	Inland Steel Co.	Indiana Harbor, Ind.	GE
1164	1500	62-½	6600	25	Tube Rolling Mill	Coupled	1926	Gary Tube Co.	Gary, Indiana	AC
1165	1500	62-½	6600	25	Tube Mill	Direct	1927	National Tube Co.	Lorain, Ohio	AC
1166	1500	65-225	750	d.c.	48" Rev. Structural Mill	Direct	1926	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
1167	1500	65-225	750	d.c.	48" Rev. Structural Mill	Direct	1926	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
1168	1500	80	2200	60	Morgan Continuous Mill	Coupled	1920	Interstate Iron & Steel Co.	Chicago, Ill.	AC
1169	1500	94	2200	25	18" Merchant Mill	Direct	1910	Algoma Steel Co.	Sault Ste. Marie,Can	GE
1170	1500	100-125	220	d.c.	Light Rail Mill	Direct	1905	Carnegie Steel Co.	Bessemer, Pa.	W
1171	1500	100-125	220	d.c.	Light Rail Mill	Direct	1905	Carnegie Steel Co.	Bessemer, Pa.	W
1172	1500	100-150	600	d.c.	14" Merchant Mill	Direct	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
1173	1500	125-250	230	d.c.	14" Band Mill	Direct	1914	Sharon Steel Hoop Co.	Sharon, Pa.	W
1174	1500	125-250	240	d.c.	Strip Mill	Geared	1922	West Leechburg Steel Co.	Leechburg, Pa.	W
1175	1500	125-250	240	d.c.	Strip Mill	Geared	1922	West Leechburg Steel Co.	Leechburg, Pa.	W
1176	1500	133-81.5	6600	25	18" Structural Mill	Direct	1915	Bethlehem Steel Co.	So. Bethlehem, Pa.	W
1177	1500	137-275	600	d.c.	Rod Mill	Direct	1928	Sheffield Steel Corp.	Kansas City, Mo.	W
1178	1500	150	6600	60	Wide Strip Mill	Geared	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
1179	1500	150	6600	25	Wire Rod Mill	Coupled	1914	Illinois Steel Co.	Joliet, Ill.	AC
1180	1500	150-300	250	d.c.	18-14" Structural Mill	Direct	1924	Bethlehem Steel Co.	Johnstown, Pa.	AC
1181	1500	150-300	250	d.c.	18-14" Structural Mill	Direct	1924	Bethlehem Steel Co.	Johnstown, Pa.	AC
1182	1500	164	2200	60	Hot Strip Mill	Direct	1928	Danville Structural Steel Co.	Danville, Pa.	EM
1183	1500	164	2200	60	Hot Strip Mill	Direct	1928	Danville Structural Steel Co.	Danville, Pa.	EM
1184	1500	182-162	6600	25	10" Bar Mill	Direct & Rope	1913	Carnegie Steel Co.	Duquesne, Pa.	W
1185	1500	187	2200	25	Sheet Mill	Chain	1914	National Enamel & Stamping Co.	Granite City, Ill.	AC
1186	1500	198-400	600	d.c.	10" Strip Mill	Rope & Direct	1926	LacLede Steel Co.	Alton, Ill.	W
1187	1500	200	6600	60	Strip Sheet Mill	Geared	1926	Weirton Steel Co.	Weirton, W. Va.	GE
1188	1500	200-400	600	d.c.	20"-16" Hot Strip Mill	Geared	1925	Acme Steel Co.	Chicago, Ill.	W
1189	1500	200-300	600	d.c.	10" Merchant Mill	Direct	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
1190	1500	200-500	600	d.c.	Seamless Tube Mill	Direct	1928	National Tube Co.	Gary, Ind.	AC
1191	1500	200-500	600	d.c.	Seamless Tube Mill	Direct	1928	National Tube Co.	Gary, Ind.	AC
1192	1500	200-600	600	d.c.	Rod Mill	Geared	1928	Sheffield Steel Corp.	Kansas City, Mo.	W
1193	1500	210	2200	25	30" Sheet Mill	Rope	1910	American Rolling Mill Co.	Middletown, Ohio	W
1194	1500	218-145	6600	25	18" Merchant Mill	Geared	1916	Carnegie Steel Co.	Duquesne, Pa.	W
1195	1500	220-440	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
1196	1500	234	2200	60	Sheet Mill	Geared	1915	Canton Sheet & Steel Co.	Canton, Ohio	W
1197	1500	234	2200	60	Sheet Mill	Geared	1916	Mansfield Sheet & Tin Plate Co.	Mansfield, Ohio	W
1198	1500	234	220	60	26" Sheet Bar Mill	Geared	1916	Canton Sheet Steel Co.	Canton, Ohio	W
1199	1500	234	2200	60	Sheet Mill	Geared	1917	Liberty Steel Co.	Warren, Ohio	W
1200	1500	234	2200	60	Sheet Mill	Geared	1919	Mansfield Sheet & Tin Plate Co.	Mansfield, Ohio	W
1201	1500	234	2200	60	10" Rod Mill	Geared	1921	Columbia Steel Co.	Pittsburgh, Cal.	W
1202	1500	240	2200	60	Sheet Mill	Geared	1919	Follansbee Bros.	Toronto, Ohio	AC
1203	1500	240	2200	60	Sheet Mill	Geared	1919	Follansbee Bros.	Toronto, Ohio	AC
1204	1500	240	2200	60	Sheet Mill	Geared	1920	Central Alloy Steel Co.	Canton, Ohio	AC
1205	1500	240	2200	60	Sheet Mill	Geared	1922	Central Alloy Steel Co.	Canton, Ohio	GE
1206	1500	250	2200	25	Sheet Mill	Geared	1919	Eastern Rolling Mills Co.	Baltimore, Md.	GE
1207	1500	250	2200	25	Sheet Mill	Geared	1919	Eastern Rolling Mills Co.	Baltimore, Md.	GE
1208	1500	250-565	600	d.c.	13" Skelp Mill	Direct	1928	National Tube Co.	McKeesport, Pa.	GE
1209	1500	257	2200	25	10" Hot Strip Mill	Direct	1919	Superior Steel Co.	Carnegie, Pa.	GE
1210	1500	270	2200	60	Sheet Mill	Geared	1914	Youngstown Sheet & Tube Co.	Warren, Ohio	W
1211	1500	270	2200	60	24" Sheet Bar & Billet Mill	Geared	1914	Central Steel Co.	Massillon, Ohio	W
1212	1500	270	2200	60	Lamberton Rod Mill	Geared	1915	United Alloy Steel Corporation	Canton, Ohio	W
1213	1500	270	2200	60	22" Bar and Billet Mill	Geared	1918	Central Steel Co.	Massillon, Ohio	W
1214	1500	277	2200	60	22" Skelp Mill	Direct	1924	Bethlehem Steel Corp.	Coatesville, Pa.	GE
1215	1500-1500	280-420	600	d.c.	20" Hot Strip Mill	Direct	1922	Otis Steel Co.	Cleveland, Ohio	GE
1216	1500-1500	280-420	600	d.c.	20" Hot Strip Mill	Direct	1922	Otis Steel Co.	Cleveland, Ohio	GE
1217	1500-1500	280-420	600	d.c.	20" Hot Strip Mill	Direct	1922	Otis Steel Co.	Cleveland, Ohio	GE
1218	1500	295	2200	60	Sheet Mill	Geared	1924	Kansas City Bolt & Nut Co.	Kansas City, Mo.	AC
1219	1500	300	4600	60	Sheet Mill	Geared	1922	Michigan Steel Corp.	Detroit, Mich.	GE
1220	1500	300	4600	60	Sheet Mill	Geared	1924	Michigan Steel Corp.	Detroit, Mich.	GE
1221	1500-1250-875	300-250-175	2200	50	Merchant Mill	Direct	1925	Southern Calif. Iron & Steel Co.	Los Angeles, Cal.	GE
1222	1500	315-630	600	d.c.	13" Skelp Mill	Direct	1928	National Tube Co.	McKeesport, Pa.	GE
1223	1500-1200-900	320-275-200	2200	60	10" Merchant Mill	Geared	1925	Pacific Coast Steel Co.	So. San Fran., Cal.	GE
1224	1500	322-193	2200	60	18" Sheet Bar Mill	Geared	1926	Columbia Steel Co.	Pittsburgh, Calif.	W
1225	1500	325-450	600	d.c.	10" Strip Mill	Direct	1928	Superior Steel Corp.	Carnegie, Pa.	W
1226	1500	355	2200	60	35" Blooming Mill	Geared	1924	Timken Roller Bearing Co.	Canton, Ohio	AC
1227	1500	360-240	6600	25	12" Merchant Mill	Rope	1916	Carnegie Steel Co.	Duquesne, Pa.	W
1228	1500	360	6400	25	Billet Mill	Geared	1916	American Steel & Wire Co.	Cleveland, Ohio	W
1229	1500	360	2200	60	10" Hot Strip Mill	Direct	1919	Superior Steel Co.	Carnegie, Pa.	GE
1230	1500-1250-1000	360-300-240	2200	25	28" Rail Mill	Geared	1920	Bethlehem Steel Co.	Steelton, Pa.	GE
1231	1500	360	4000	60	Sheet Mill	Geared	1923	Pacific Sheet Steel Corp.	So.San Francisco,Cal	GE
1232	1500	360	2200	60	Sheet Mill	Geared	1923	Columbia Steel Co.	Pittsburgh, Cal.	GE
1233	1500	368	2200	25	Sheet Bar (Finishing) Mill	Geared	1923	Inland Steel Co.	Chicago, Ill.	W
1234	1500-1125	375-281	2200	25	10" Merchant Mill	Geared	1916	Donner Steel Co.	Buffalo, N. Y.	GE
1235	1500	375	2200	25	26" 3 high Blooming Mill	Geared	1920	Atlas Crucible Steel Co.	Dunkirk, N. Y.	GE
1236	1500	375	6600	25	Tube Rolling Mill	Geared	1927	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
1237	1500	440	2200	60	22" Bar Mill	Geared	1919	Kansas City Bolt & Nut Co.	Kansas City, Mo.	W
1238	1500	450	2200	30	3 High Skelp Mill	Geared	1915	Spang Chalfant Co.	Etna, Pa.	GE
1239	1500-1500-1200	450-360-270	2300	60	16" Strip Mill	Geared	1916	Trumbull Steel Co.	Warren, Ohio	GE
1240	1500	450	2200	60	Roughing Mill	Geared	1919	Pacific Coast Steel Co.	San Francisco, Calif.	AC
1241	1500	450	2200	60	Bar Mill	Rope	1919	Pacific Coast Steel Co.	Seattle, Wash.	AC
1242	1500	450	2200	60	9" Rod Mill	Direct	1926	Washburn Wire Co.	Philipsdale, R. I.	W
1243	1500	450	6600	60	Strip Sheet Mill	Geared	1926	Weirton Steel Co.	Weirton, W. Va.	GE
1244	1500	450	6600	60	Strip Sheet Mill	Geared	1926	Weirton Steel Co.	Weirton, W. Va.	GE
1245	1500	450-550	600	d.c.	Rod Mills Nos. 16, 18	Direct	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
1246	1500-1200-900	468-375-281	6600	25	12" Strip Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	GE
1247	1500	470-510	230	d.c.	Rod Mill	Direct	1923	John A. Roebling Sons	New York, N. Y.	W
1248	1500	491	6600	25	14" Cont. Skelp Mill	Geared	1924	Gary Tube Co.	Gary, Ind.	AC
1249	1500	505	6600	60	16" Hoop and Band Mill	Geared	1915	Weirton Steel Co.	Weirton, W. Va.	W
1250	1500	257-508	6600	60		Coupled	1924	Weirton Steel Co.	Weirton, W. Va.	AC
1251	1500	508	6600	60	Steel Mill	Geared	1924	Weirton Steel Co.	Weirton, W. Va.	AC
1252	1500	514	2200	60	Wire Rod Mill	Coupled	1917	Kokomo Steel & Wire Co.	Kokomo, Ind.	AC
1253	1500	514	6600	60	Hot Strip Mill	Geared	1917	Weirton Steel Co.	Weirton, W. Va.	AC
1254	1500-1500	514-237	6600	60	Hot Strip Mill	Geared	1917	Weirton Steel Co.	Weirton, W. Va.	AC

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1255	1500	593	6600	60	6 Stand 11″ Mill	Coupled	1921	Tennessee Coal, Iron & R. R. Co.	Birmingham, Ala.	AC
1256	1500	600	2200	60	Light Rail Mill	Geared	1919	West Virginia Rail Co.	Huntington, W. Va.	AC
1257	1500	705	2200	60	Strip Mill	Geared	1922	West Leechburg Steel Co.	Leechburg, Pa.	W
1258	1500	705	2200	60	Strip Mill	Geared	1922	West Leechburg Steel Co.	Leechburg, Pa.	W
1259	1500	705	2200	60	24″ Bar (Finishing) Mill	Geared	1922	Youngstown Steel Co.	Youngstown, Ohio	W
1260	1500	705	2200	60	Skelp Mill Scarfing Stand	Geared	1923	Bethlehem Steel Corp.	Coatesville, Pa.	AC
1261	1500	705	2200	60	22″ Bar Mill	Geared	1924	Atchison, Topeka & Sante Fe Ry.	San Francisco, Cal.	AC
1262	1500	705	2200	60	20″-16″ Hot Strip Mill	Geared	1925	Acme Steel Goods Co.	Riverdale, Ill.	W
1263	1500	735	2200	25		Geared	1923	Scullin Steel Co.	St. Louis, Mo.	AC
1264	1500	890–540	6600	60	4 Stand 12″ Mill	Coupled	1921	Tennessee Coal, Iron & R. R. Co.	Birmingham, Ala.	AC
1265	1600	94	2200	25	Sheet Mill	Rope	1910	American Sheet & Tin Plate Co.	Gary, Ind.	GE
1266	1600	94	2200	25	Sheet Mill	Rope	1910	American Sheet & Tin Plate Co.	Gary, Ind.	GE
1267	1600	94	2200	25	Sheet Mill	Rope	1913	American Sheet & Tin Plate Co.	Gary, Ind.	GE
1268	1600	94	2200	25	Sheet Mill	Rope	1913	American Sheet & Tin Plate Co.	Gary, Ind.	GE
1269	1600	94	2200	25	Tin Mill	Rope	1915	McKeesport Tin Plate Co.	McKeesport, Pa.	GE
1270	1600	94	2200	25	Tin Mill	Rope	1915	McKeesport Tin Plate Co.	McKeesport, Pa.	GE
1271	1600	94	2200	25	Tin Mill	Rope	1915	McKeesport Tin Plate Co.	McKeesport, Pa.	GE
1272	1600	94	2200	25	Tin Mill	Rope	1915	McKeesport Tin Plate Co.	McKeesport, Pa.	GE
1273	1600	150	6600	25		Direct	1912	Pittsburgh Crucible Steel Co.	Pittsburgh, Pa.	GE
1274	1600	210	2200	25	Sheet Mill	Geared	1912	Inland Steel Co.	Indiana Harbor, Ind.	W
1275	1600	210–420	525	d.c.	Rod Mill	Geared	1913	Steel Company of Canada	Hamilton, Ont.	W
1276	1600	210–420	525	d.c.	Rod Mill	Geared	1913	Steel Company of Canada	Hamilton, Ont.	W
1277	1600	214	2200	25	84″ Plate Mill	Geared	1913	Otis Steel Co.	Cleveland, Ohio	GE
1278	1600	240	2200	60	Sheet Mill	Geared	1919	Falcon Steel Co.	Niles, Ohio	GE
1279	1600	244	2200	25	84″ Plate Mill (Roughing)	Geared	1912	Alan Wood Iron & Steel Co.	Ivy Rock, Pa.	W
1280	1600	244	2200	25	84″ Plate Mill (Finishing)	Geared	1912	Alan Wood Iron & Steel Co.	Ivy Rock, Pa.	W
1281	1600	250	440	25	Sheet Mill	Geared	1914	Seneca Iron & Steel Co.	Buffalo, N. Y.	GE
1282	1600	257	2200	60	14″ Cont. Billet Mill	Geared	191?	Atlantic Steel Co.	Atlanta, Ga.	GE
1283	1600	270	2200	60	Sheet Mill	Geared	1916	Wheeling Steel Corporation	Wheeling, W. Va.	W
1284	1600	270	2200	60	Sheet Mill	Geared	1916	Wheeling Steel Corporation	Portsmouth, Ohio	W
1285	1600	500	6600	25	Rod (Finishing) Mill	Rope	1910	American Steel & Wire Co.	Birmingham, Ala.	W
1286	1600	490	6600	25	Hoop Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	W
1287	1600	440–490–540	6600	25	Hoop Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	W
1288	1600	440–490–540	6600	25	Hoop Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	W
1289	1600	600	2200	60	Piercing Mill	Geared	1921	Standard Seamless Tube Co.	Pittsburgh, Pa.	GE
1290	1600	600	2200	60	Tube Rolling Mill	Geared	1925	Standard Seamless Tube Co.	Economy, Pa.	GE
1291	1600	705	2200	60	9″ Hot Strip Mill	Geared	1926	West Leechburg Steel Co.	West Leechburg, Pa.	W
1292	1650	112.5–270	750	d.c.	Slabbing Mill	Direct	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
1293	1650–1500–1350	413–375–337	6600	25	10″ Bar Mill, No. 10	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
1294	1700–1700	90–140	600	d.c.	14″ Continuous Mill	Direct	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
1295	1700–1700	90–205	600	d.c.	14″ Continuous Mill	Direct	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
1296	1700	214	2200	25	Sheet Mill	Geared	1915	American Sheet & Tin Plate Co.	Gary, Ind.	GE
1297	1700	214	2200	25	Tin Mill	Geared	1915	American Sheet & Tin Plate Co.	Gary, Ind.	GE
1298	1700	214	2200	25	Tin Mill	Geared	1915	American Sheet & Tin Plate Co.	Gary, Ind.	GE
1299	1700	214	2200	25	Tin Mill	Geared	1918	American Sheet & Tin Plate Co.	Gary, Ind.	GE
1300	1700	214	2200	25	Tin Mill	Geared	1918	American Sheet & Tin Plate Co.	Gary, Ind.	GE
1301	1700	214	2200	25	Tin Mill	Geared	1918	American Sheet & Tin Plate Co.	Gary, Ind.	GE
1302	1700	214	2200	25	Tin Mill	Geared	1919	American Sheet & Tin Plate Co.	Gary, Ind.	GE
1303	1700	250	440	25	Hot Sheet Mill	Geared	1925	Seneca Iron & Steel Co.	Buffalo, N. Y.	GE
1304	1700	250–500	250	d.c.	12–10″ Mill	Geared	1925	Bethlehem Steel Co.	Johnstown, Pa.	AC
1305	1750	70–120	600	d.c.	29″ Billet Mill	Direct	1916	Youngstown Steel & Tube Co.	Indiana Harbor, Ind.	W
1306	1750	100–200	500	d.c.	12″ Spring Mill	Coupled	1926	Ford Motor Co., Fordson Plant	Detroit, Mich.	AC
1307	1750	150–300	230	d.c.	18–14″ Structural Mill	Direct	1924	Bethlehem Steel Corp.	Lackawanna, N. Y.	AC
1308	1750	180	6600	60	Rod Mill	Direct	1928	Gulf States Steel Co.	Alabama City, Ala.	W
1309	1750	514	6600	60	Rod Mill	Geared	1928	Gulf States Steel Co.	Alabama City, Ala.	W
1310	1750–1750–1140	485–360–235	2200	60	16″-14″ Merchant Mill	Geared	1927	Bourne Fuller Co.	Cleveland, Ohio	GE
1311	1800	40	600	d.c.	84″ Sheared Plate Mill	Direct	1917	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
1312	1800	75	6600	25	30″ Billet Mill	Direct	1914	Bethlehem Steel Co.	Bethlehem, Pa.	GE
1313	1800–1800	115–230	600	d.c.	20″ Hot Strip Mill	Direct	1922	Otis Steel Co.	Cleveland, Ohio	GE
1314	1800–1800	115–230	600	d.c.	20″ Hot Strip Mill	Direct	1922	Otis Steel Co.	Cleveland, Ohio	GE
1315	1800–1800	115–230	600	d.c.	20″ Hot Strip Mill	Direct	1922	Otis Steel Co.	Cleveland, Ohio	GE
1316	1800	120–80	2200	25	Light Rail Mill	Direct	1905	Illinois Steel Co.	South Chicago, Ill.	W
1317	1800	120–80	2200	25	Light Rail Mill	Direct	1905	Illinois Steel Co.	South Chicago, Ill.	W
1318	1800	125–250	600	d.c.	20″-16″ Hot Strip Mill	Direct	1925	Acme Steel Co.	Chicago, Ill.	W
1319	1800	125–250	600	d.c.	20″-16″ Hot Strip Mill	Direct	1925	Acme Steel Co.	Chicago, Ill.	W
1320	1800	150–300	250	d.c.	18-14″ Structural Mill	Direct	1924	Bethlehem Steel Co.	Lackawanna, N. Y.	AC
1321	1800	150	6600	60	Tube Mill	Direct	1928	Pittsburgh Steel Co.	Allenport, Pa.	W
1322	1800	165–350	240	d.c.	Strip Mill	Direct	1922	West Leechburg Steel Co.	Leechburg, Pa.	W
1323	1800	165–350	240	d.c.	Strip Mill	Direct	1922	West Leechburg Steel Co.	Leechburg, Pa.	W
1324	1800	185–370	600	d.c.	20″-16″ Hot Strip Mill	Geared	1925	Acme Steel Co.	Chicago, Ill.	W
1325	1800	185–370	600	d.c.	20″-16″ Hot Strip Mill	Direct	1925	Acme Steel Co.	Chicago, Ill.	W
1326	1800	185–370	600	d.c.	20″-16″ Hot Strip Mill	Direct	1925	Acme Steel Co.	Chicago, Ill.	W
1327	1800	200–400	600	d.c.	Cont. Merchant Mill	Direct	1925	Inland Steel Co.	Indiana Harbor, Ind.	GE
1328	1800	214	2200	25	6″ Hot Strip Mill	Rope	1907	American Steel & Wire Co.	Cleveland, Ohio	GE
1329	1800	235	2200	60	Sheet Mill	Geared	1915	Trumbull Steel Co.	Warren, Ohio	W
1330	1800–1500–1200	240–200–160	2300	60	10″ Hoop Mill	Belt	1918	Acme Steel Good Co.	Riverdale, Ill.	GE
1331	1800	240	2200	60	Sheet Mill	Geared	1920	Apollo Steel Co.	Apollo, Pa.	GE
1332	1800–1800	250–125	6600	25	22″ Merchant Mill	Geared	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
1333	1800	250	2200	60	Tube Rolling Mill	Direct	1915	National Tube Co.	Ellwood City, Pa.	W
1334	1800	252	2200	60	Tube Rolling Mill	Direct	1925	National Tube Co.	Ellwood City, Pa.	W
1335	1800	253	2200	60	Eight Stand Tin Mill	Coupled	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	AC
1336	1800	252	2200	60	Hot Tin Mill	Geared	1928	Columbia Steel Co.	Pittsburgh, Cal.	W
1337	1800	270	6600	60	Sheet Mill	Geared	1916	Andrews Steel Co.	Newport, Ky.	W
1338	1800	270	6600	60	Sheet Mill	Geared	1916	Andrews Steel Co.	Newport, Ky.	W
1339	1800	275–550	600	d.c.	12″ Skelp Mill	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	W
1340	1800	275–550	600	d.c.	12″ Skelp Mill	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	W
1341	1800	295	2200	60	32″ Hot Roll Mill	Geared	1926	American Sheet & Tin Plate Co.	Monnessen, Pa.	AC
1342	1800–1350	300	2200	60	Tube Rolling Mill	Geared	1927	National Tube Co.	Ellwood City, Pa.	GE
1343	1800	350–640	500	d.c.	18″ Rougher	Geared	1926	Pittsburgh Crucible Steel Co.	Midland, Pa.	AC
1344	1800	366	2200	25	22″ Billet & Struct. Mill	Geared	1919	Scullin Steel Co.	St. Louis, Mo.	W
1345	1800–1800–1800	370–300–247	6600	60	Sheet Bar Mill	Geared	1920	American Rolling Mill Co.	Ashland, Ky.	GE
1346	1800–1500–1200	450–375–300	6600	25	10″ Hoop Mill, No. 11	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
1347	1800	475–550	550	d.c.	Merchant Mill	Direct	1928	Pittsburgh Steel Co.	Monessen, Pa.	CW
1348	1800	500	6600	25	20″ Hot Strip Mill	Geared	1922	Otis Steel Co.	Cleveland, Ohio	GE
1349	1800	514	2200	60	Rod Mill	Geared	1923	Columbia Steel Co.	Pittsburgh, Cal.	GE
1350	1800	550–650	250	d.c.	22″ Merchant Mill	Geared	1925	Crucible Steel Co.	Pittsburgh, Pa.	GE
1351	1850–1450–925	120–94–60	6600	25	16″ Hand Bar Mill	Direct	1921	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
1352	1850	575–221	600	d.c.	Rod Mill	Direct & Belt	1922	Atlantic Steel Co.	Atlanta, Ga.	W
1353	2000	50–100	600	d.c.	30″ Bar Mill	Direct	1919	Follansbee Brothers Co.	Toronto, Ohio	W
1354	2000	0–57–163	700	d.c.	52″ Struct. Edging Mill	Direct	1926	Carnegie Steel Co.	Homestead, Pa.	W
1355	2000	0–57–163	700	d.c.	52″ Struct. Edging Mill	Direct	1926	Carnegie Steel Co.	Homestead, Pa.	W
1356	2000	68	6600	25	28″ Rail Mill	Direct	906	Illinois Steel Co.	Gary, Ind.	GE
1357	2000	75	2200	25	Blooming Mill	Direct	1916	Wickwire Spencer Steel Co.	Buffalo, N. Y.	GE
1358	2000	83	6600	25	96″ Plate Mill	Coupled	1918	Youngstown Sheet & Tube Co.	Youngstown, Ohio	AC
1359	2000	83	6600	25	84″ Plate Mill	Coupled	1918	Youngstown Sheet & Tube Co.	Youngstown, Ohio	AC
1360	2000	85–165	600	d.c.	21″ Cont. Sheet Bar and Skelp Mill	Direct	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	GE
1361	2000	85–165	600	d.c.	21″ Cont. Sheet Bar and Skelp Mill	Direct	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	GE

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1362	2000	85–165	600	d.c.	21″ Cont. Sheet Bar and Skelp Mill	Direct	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	GE
1363	2000	94	2200	25	18″ Merchant Mill	Direct	1912	Forged Steel Wheel Co.	Butler, Pa.	GE
1364	2000–2000–2000	100–83.3–65	6600	25	12″ Structural Mill	Direct	1916	Bethlehem Steel Co.	Bethlehem, Pa.	GE
1365	2000	113	6600	25	12″ Merchant Mill	Direct	1909	Illinois Steel Co.	Gary, Ind.	W
1366	2000	134–275	600	d.c.	10″ Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	W
1367	2000	137½–275	500	d.c.	10″ Merchant-Rod & Strip Mill	Direct	1927	Ford Motor Co.	Detroit, Mich.	W
1368	2000	163–113	6600	25	10″ Merchant Mill	Direct	1909	Illinois Steel Co.	Gary, Ind.	W
1369	2000	180	2200	60	14″ Strip Mill	Direct	1928	Superior Steel Corp.	Carnegie, Pa.	W
1370	2000	200–400	600	d.c.	Hot Strip Mill	Geared	1926	Columbia Steel Co.	Butler, Pa.	GE
1371	2000	200–400	600	d.c.	Hot Strip Mill	Geared	1926	Columbia Steel Co.	Butler, Pa.	GE
1372	2000	200–400	600	d.c.	Hot Strip Mill	Geared	1926	Columbia Steel Co.	Butler, Pa.	GE
1373	2000	200–400	600	d.c.	Hot Strip Mill	Geared	1926	Columbia Steel Co.	Butler, Pa.	GE
1374	2000	200–400	600	d.c.	14″-12″ Skelp Mill	Geared	1926	Wheeling Steel Co.	Benwood, W. Va.	GE
1375	2000	200–400	600	d.c.	14″-12″ Skelp Mill	Geared	1926	Wheeling Steel Co.	Benwood, W. Va.	GE
1376	2000	200–400	600	d.c.	14″-12″ Skelp Mill	Geared	1926	Wheeling Steel Co.	Benwood, W. Va.	GE
1377	2000	200–400	600	d.c.	Strip Sheet Mill	Direct	1926	Weirton Steel Co.	Weirton, W. Va.	GE
1378	2000	200–400	600	d.c.	Strip Sheet Mill	Direct	1926	Weirton Steel Co.	Weirton, W. Va.	GE
1379	2000	200	2200	60	Rail Rerolling	Direct	1928	Danville Structural Co.	Danville, Ky.	W
1380	2000	200–350	600	d.c.	14″ Strip Mill	Direct	1928	Superior Steel Corp.	Carnegie, Pa.	W
1381	2000–1700	210–680	600	d.c.	14″ Continuous Mill	Direct	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
1382	2000	214	6600	25	40″ Rail Mill	Geared	1906	Illinois Steel Co.	Gary, Ind.	GE
1383	2000	214	6600	25	40″ Rail Mill	Geared	1906	Illinois Steel Co.	Gary, Ihd.	GE
1384	2000	214	6600	25	40″ Billet Mill	Geared	1907	Illinois Steel Co.	Gary, Ind.	GE
1385	2000	214	6600	25	40″ Billet Mill	Geared	1907	Illinois Steel Co.	Gary, Ind.	GE
1386	2000	214	2200	25	Jobbing Plate Mill	Geared	1925	Otis Steel Co.	Cleveland, Ohio	GE
1387	2000	230–460	600	d.c.	Merchant Mill	Direct	1925	International Harvester Co.	Chicago, Ill.	W
1388	2000	230–460	600	d.c.	Merchant Mill	Direct	1925	International Harvester Co.	Chicago, Ill.	W
1389	2000	230–460	600	d.c.	Merchant Mill	Direct	1925	International Harvester Co.	Chicago, Ill.	W
1390	2000	230–460	600	d.c.	Sheet Mill	Geared	1926	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
1391	2000	230–460	600	d.c.	10″ Rod Mill	Geared	1927	American Steel & Wire Co.	Worcester, Mass.	W
1392	2000	234–161	2200	60	10″ Skelp (Finishing) Mill	Belt	1916	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	W
1393	2000	234	2200	60	Sheet Mill	Geared	1919	Newton Steel Co.	Newton Falls, Ohio	W
1394	2000	234	2200	60	Tin Mill	Geared	1920	National Enam. & Stamping Co.	St. Louis, Mo.	W
1395	2000	234	2200	60	Sheet Mill	Geared	1921	Newton Steel Co.	Newton Falls, Ohio	W
1396	2000	234	2200	60	Sheet Mill	Geared	1923	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
1397	2000	240	2200	60	32″ Blooming Mill	Geared	1915	Mansfield Sheet & Tin Plate Co.	Mansfield, Ohio	GE
1398	2000	240	2200	60	18″ Sheet Bar Mill	Geared	1920	National Enam. & Stamping Co.	Granite City, Ill.	GE
1399	2000	240	2200	60	Sheet Mill	Geared	1919	Republic Iron & Steel Co.	Niles, Ohio	GE
1400	2000	244	2200	25	90″ Plate Mill	Rope	1912	Inland Steel Co.	Indiana Harbor, Ind.	W
1401	2000	250–150	2200	60	Morgan Continuous Mill	Coupled	1919	Interstate Iron & Steel Co.	Chicago, Ill.	AC
1402	2000–2000	250–161	6600	25	10″ Skelp Mill	Geared	1915	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
1403	2000	250	6600	25	Sheet Mill	Geared	1920	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
1404	2000	250	6600	25	Tube & Piercing Mill	Geared	1928	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
1405	2000	250–465	240	d.c.	22″ Bar Mill	Geared	1928	Timken Roller Bearing Co.	Canton, Ohio	GE
1406	2000	250	6600	25	Sheet Mill	Geared	1920	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
1407	2000	260–800	600	d.c.	14″ Continuous Mill	Direct	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
1408	2000	275–550	600	d.c.	10″ Skelp Mill	Geared	1928	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
1409	2000	295	2200	60	Billet Mill	Geared	1928	I. A. Roebling Sons Co.	Trenton, N. J.	W
1410	2000	294	6600	25	14″ Cont. Skelp Mill	Coupled	1924	Gary Tube Co.	Gary, Ind.	AC
1411	2000	300	2200	60	Sheet Mill	Geared	1926	American Sheet & Tin Plate Co.	Scottdale, Pa.	GE
1412	2000	300–500	600	d.c.	Bar Plate Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
1413	2000	300–500	600	d.c.	Bar Plate Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
1414	2000	300–500	600	d.c.	Bar Plate Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
1415	2000	315–500	600	d.c.	10″ Merchant Mill	Geared	1926	Illinois Steel Co.	Gary, Ind.	GE
1416	2000	350–234	2200	60	10″ Skelp (Roughing) Mill	Geared	1917	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	W
1417	2000	375	2200	25	84″ Plate Mill	Geared	1916	Donner Steel Co.	Buffalo, N. Y.	GE
1418	2000	375	2200	25	Wheel Mill	Geared	1916	Bethlehem Steel Co.	Johnstown, Pa.	AC
1419	2000–2000–1600	450–360–270	2200	60	16″ Hot Strip Mill	Geared	1920	Trumbull Steel Co.	Warren, Ohio	GE
1420	2000–2000–1600	450–360–270	2200	60	16″ Hot Strip Mill	Geared	1920	Trumbull Steel Co.	Warren, Ohio	GE
1421	2000–2000–1600	450–360–270	2200	60	16″ Hot Strip Mill	Geared	1920	Trumbull Steel Co.	Warren, Ohio	GE
1422	2000	450	6600	60	Rail Mill Roughing Stand	Geared	1925	Colorado Fuel & Iron Co.	Minnequa, Col.	GE
1423	2000	450	6600	60	25″ Structural Mill	Geared	1926	Colorado Fuel & Iron Co.	Minnequa, Col.	GE
1424	2000	500–300	2200	50	22″ Merchant Mill	Geared	1927	Columbia Steel Corp.	Torrance, Calif.	GE
1425	2000	505	6600	60	Plate Mill	Geared	1922	American Rolling Mills Co.	Ashland, Ky.	W
1426	2000	505	6600	60	Plate Mill	Geared	1922	American Rolling Mills Co.	Ashland, Ky.	W
1427	2000	600	6600	60	Sheet Mill	Geared	1924	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	GE
1428	2000	600	6600	60	Fin. Stand of 24″ Struc. Mill	Geared	1924	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	GE
1429	2000	600	6600	60		Geared	1925	Tenn. Coal, Iron & R. R. Co.	Fairfield, Ala.	GE
1430	2000–1600–1200	625–500–375	6600	25	12″ Strip Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	GE
1431	2000–1600–1200	625–500–375	6600	25	14″ Bar Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	GE
1432	2070–1650–1205	235–187.5–137	6600	25	20″ Hot Strip Mill	Direct	1920	Illinois Steel Co.	Gary, Ind.	GE
1433	2100	50–125	700	d.c.	42″ Universal Plate Mill	Direct	1916	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	W
1434	2100	47–120	700	d.c.	34″ Blooming Mill	Direct	1916	Penn Seaboard Steel Corporation	New Castle, Del.	W
1435	2100–2100	150–310	600	d.c.	14″ Continuous Mill	Direct	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
1436	2100–1600	150–460	600	d.c.	14″ Continuous Mill	Direct	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
1437	2100	720	6600	60	Rod Mill	Geared	1928	Gulf States Steel Co.	Alabama City, Ala.	W
1438	2150	50–100	535	d.c.	Reversing Bar Mill	Direct	1926	Standard Seamless Tube Co.	Economy, Pa.	GE
1439	2200	50–120	600	d.c.	40″ Universal Plate Mill	Direct	1919	Dominion Foundrys & Steel Co.	Hamilton, Ont.	W
1440	2200	70–150	600	d.c.	28″ Blooming Mill	Direct	1920	Atlantic Steel Co.	Atlanta, Ga.	W
1441	2200–2000–1800	275–250–225	6600	25	10″ Bar Mill, No. 15	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
1442	2200–2000–1800	275–250–225	6600	25	18″ Band Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio,	GE
1443	2200	505–303	2200	60	18″ Bar (Finishing) Mill	Geared	1919	Central Steel Co.	Massillon, Ohio	W
1444	2300–1300	115.4–65	6600	25	10″ Skelp Mill	Geared	1915	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
1445	2300	200–400	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
1446	2360–1880–1440	410–327–250	2200	60	Rod Mill	Geared	1916	Keystone Steel & Wire Co.	Peoria, Ill.	GE
1447	2400	500	6600	25	Wire Rod Mill	Geared	1916	Illinois Steel Co.	Gary, Ind.	AC
1448	2400	505	2200	60	22″ Bar Mill	Geared	1926	Pacific Coast Steel Co.	Seattle, Wash.	W
1449	2470–1725–1235	430–300–215	2200	25	Rod Mill	Geared	1916	Wickwire Spencer Steel Co.	Buffalo, N. Y.	GE
1450	2500	53–80	660	d.c.	Reversing Plate Mill	Direct	1926	Lukens Steel Co.	Coatesville, Pa.	GE
1451	2500	80	2200	60	Bar Mill	Direct	1928	Interstate Iron & Steel Co.	Chicago, Ill.	AC
1452	2500	82	6600	60	28″ Structural Mill	Direct	1917	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	GE
1453	2500	113–91	6600	25	12″ Merchant Mill	Geared	1909	Illinois Steel Co.	Gary, Ind.	W
1454	2500	146	6600	25	16″ Cont. Skelp Mill	Coupled	1924	Gary Tube Co.	Gary, Ind.	AC
1455	2500	150	6600	25	28″ Billet Mill	Geared	1923	Pittsburgh Crucible Steel Co.	Midland, Pa.	GE
1456	2500	160–320	600	d.c.	Continuous Sheet Mill	Geared	1926	American Sheet & Tinplate Co.	Gary, Ind.	W
1457	2500	160–320	600	d.c.	Continuous Sheet Mill	Geared	1926	American Sheet & Tinplate Co.	Gary, Ind.	W
1458	2500	160–320	600	d.c.	Continuous Sheet Mill	Geared	1926	American Sheet & Tinplate Co.	Gary, Ind.	W
1459	2500	160–320	600	d.c.	Continuous Sheet Mill	Geared	1926	American Sheet & Tinplate Co.	Gary, Ind.	W
1460	2500	160–320	600	d.c.	Continuous Sheet Mill	Geared	1926	American Sheet & Tinplate Co.	Gary, Ind.	W
1461	2500	160–320	600	d.c.	Continuous Sheet Mill	Geared	1926	American Sheet & Tinplate Co.	Gary, Ind.	W
1462	2500	180–450	600	d.c.	Wire Rod Mill	Geared	1928	John A. Roebling Sons	Trenton, N. J.	GE
1463	2500	184	6600	25	Skelp Mill	Rope	1908	National Tube Co.	Lorain, Ohio	W
1464	2500	184	6600	25	Skelp Mill	Rope	1908	National Tube Co.	Lorain, Ohio	W
1465	2500	187½	6600	25	18″ Band Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	GE
1466	2500	187½	6600	25	18″ Band Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	GE
1467	2500	200–400	600	d.c.	Strip Sheet Mill	Direct	1926	Weirton Steel Co.	Weirton, W. Va.	GE
1468	2500	200–400	600	d.c.	Strip Sheet Mill	Direct	1926	Weirton Steel Co.	Weirton, W. Va.	GE

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1469	2500	200-400	600	d.c.	Strip Sheet Mill	Direct	1926	Weirton Steel Co.	Weirton, W. Va.	GE
1470	2500	235	2200	60	84" Plate (Finishing) Mill	Geared	1917	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
1471	2500	240	2200	60	Sheet Mill	Geared	1919	Wheeling Steel Corp.	Steubenville, Ohio	GE
1472	2500	240	2200	60	24" Sheet Bar Mill	Geared	1920	Mansfield Sheet & Tin Plate Co.	Mansfield, Ohio	GE
1473	2500	247	6600	25	Piercing Mill	Geared	1923	Gary Tube Co.	Gary, Ind.	W
1474	2500	247	6600	25	Seamless Tube Mill	Geared	1925	Gary Tube Company	Gary, Ind.	W
1475	2500	252	2200	60	Skelp Mill	Geared	1917	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	W
1476	2500	252	2200	60	Skelp Mill	Geared	1917	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	W
1477	2500	257	2200	60	Piercing Mill	Geared	1925	Globe Steel Tube Co.	Milwaukee, Wis.	AC
1478	2500	295	6600	25	16" Cont. Skelp Mill	Coupled	1924	Gary Tube Co.	Gary, Ind.	AC
1479	2500	295	2200	60	18" Continuous Billet Mill	Geared	1926	American Steel & Wire Co.	Worcester, Mass.	AC
1480	2500	296	2200	60	18" Continuous Rod Mill	Geared	1928	Sheffield Steel Corp.	Kansas City, Mo.	AC
1481	2500	300	2200	25	Sheet Mill	Geared	1925	Inland Steel Co.	Indiana Harbor, Ind.	GE
1482	2500	352-167	6600	60	16" Hoop and Band Mill	Geared	1915	Weirton Steel Co.	Weirton, W. Va.	W
1483	2500	500	2200	60	22" Bar Mill	Geared	1923	Phoenix Iron Co.	Phoenixville, Pa.	W
1484	2600	81.5	6600	25	Rod (Roughing) Mill	Geared	1910	American Steel & Wire Co.	Birmingham, Ala.	W
1485	2600	320-275	600	d.c.	26" & 21" Cont. Mill	Direct	1926	Bethlehem Steel Co.	Sparrows Point, Md.	GE
1486	2600	368	6400	25	Rod Mill	Geared	1916	American Steel & Wire Co.	Cleveland, Ohio	W
1487	2750-2240-1750	262-214-167	6600	25	12" Hot Strip Mill	Direct	1920	Illinois Steel Co.	Gary, Ind.	GE
1488	2750-2500-2250	275-250-225	6600	25	14" Bar Mill, No. 14	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
1489	2750	450	6600	60	Rod Mill	Geared	1928	Gulf States Steel Co.	Alabama City, Ala.	W
1490	2870-1435	400-200	600	d.c.	10" Rod Mill	Geared	1922	Wheeling Steel Corp.	Portsmouth, Ohio	GE
1491	2900	47-120	700	d.c.	34" Blooming Mill	Direct	1917	Sharon Steel Hoop Co.	Youngstown, Ohio	W
1492	3000	40-100	600	d.c.	Seamless Tube Mill	Direct	1925	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
1493	3000	65-130	600	d.c.	30" Rev. Bar Mill	Direct	1927	National Tube Co.	Lorain, Ohio	W
1494	3000	65-130	650	d.c.	30" Rev. Bar Mill	Direct	1927	Jones & Laughlin Steel Co.	Woodlawn, Pa.	W
1495	3000	70-175	750	d.c.	24" Bar Mill	Direct	1927	Inland Steel Corp.	Ind. Harbor, Ind.	GE
1496	3000	70-150	750	d.c.	24" Reversing Bar Mill	Direct	1925	Inland Steel Co.	Indiana Harbor, Ind.	GE
1497	3000	91	2200	25	Struct. (Roughing) Mill	Geared	1910	Illinois Steel Co.	South Chicago, Ill.	W
1498	3000	125	6400	25	20" Flat Mill	Coupled	1916	American Steel & Wire Co.	Cleveland, Ohio	AC
1499	3000	125-200	600	d.c.	Seamless Tube Mill	Direct	1925	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
1500	3000	150	6600	25	Wire Rod Mill	Coupled	1920	Minnesota Steel Co.	Steelton, Minn.	AC
1501	3000	150-300	250	d.c.	18"14" Structural Mill	Direct	1924	Bethlehem Steel Co.	Johnstown, Pa.	AC
1502	3000	150-300	250	d.c.	18"-14" Structural Mill	Direct	1924	Bethlehem Steel Co.	Johnstown, Pa.	AC
1503	3000-3000-3000	155-144-130	6600	60	24" Structural Mill	Direct	1917	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	GE
1504	3000	180-360	600	d.c.	Hot Strip Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
1505	3000	180-360	600	d.c.	Hot Strip Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
1506	3000	180-360	600	d.c.	Hot Strip Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
1507	3000	180-360	600	d.c.	Hot Strip Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
1508	3000	180-370	600	d.c.	10" Wire Rod Mill	Geared	1926	American Steel & Wire Co.	Worcester, Mass.	W
1509	3000	184	6600	25	16" Cont. Skelp Mill	Coupled	1924	Gary Tube Co.	Gary, Ind.	AC
1510	3000-3000	200-360	600	d.c.	14" Continuous Mill	Geared	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
1511	3000	200-400	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corp.	Steubenville, O.	GE
1512	3000	200-400	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
1513	3000	200-400	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
1514	3000	200-400	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
1515	3000	209	6600	25	12" & 16" Merchant Mill	Geared	1913	Minnesota Steel Co.	Duluth, Minn.	W
1516	3000	235	2200	60	100" Plate Mill	Geared	1922	National Enam. & Stamping Co.	St. Louis, Mo.	W
1517	3000	245	2200	25	90" Plate Mill	Geared	1920	Inland Steel Co.	Indiana Harbor, Ind.	W
1518	3000	250	6600	25	18" Cont. Billet Mill	Geared	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
1519	3000	250	6600	25	Piercing Mill	Geared	1927	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
1520	3000	250	6600	25	Piercing Mill	Geared	1927	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
1521	3000	250	6600	25	Piercing Mill	Geared	1927	National Tube Co.	Lorain, Ohio	AC
1522	3000	250	6600	25	Piercing Mill	Geared	1927	National Tube Co.	Lorain, Ohio	AC
1523	3000-2500-2000	300-250-200	6600	25	18" Band Mill, No. 13	Direct	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
1524	3000-2500-2000	300-250-200	6600	25	12" Hoop Mill, No. 12	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
1525	3000	325-485	600	d.c.	24" Structural Mill	Geared	1923	Phoenix Iron Co.	Phoenixville, Pa.	W
1526	3000	354-212	2200	60	Skelp Mill	Geared	1920	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	W
1527	3000	360	6600	60	28" Rail Mill	Geared	1919	Dominion Iron & Steel Co.	Sydney, N. S.	GE
1528	3000	375	2200	25	14" Merchant Mill	Geared	1916	Donner Steel Co.	Buffalo, N. Y.	GE
1529	3000	375	2200	25	18" Billet Mill	Geared	1916	Donner Steel Co.	Buffalo, N. Y.	GE
1530	3000	375	6600	25	24" Sheet Bar Mill	Geared	1922	Otis Steel Co.	Cleveland, Ohio	GE
1531	3000	450	6600	60	Rod Mills No. 1 to No. 6	Geared	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
1532	3000	450	6600	60	Rod Mills No. 10 to No. 15	Geared	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
1533	3000	450	6600	60	Rail Mill, Intermediate Stand	Geared	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
1534	3000	450	6600	60	25" Structural Mill	Geared	1926	Colorado Fuel & Iron Co.	Minnequa, Col.	GE
1535	3000-2250-1500	500-375-250	2200	25	24" Sheet Bar Mill	Geared	1926	Inland Steel Co.	Indiana Harbor, Ind.	GE
1536	3000	500	6600	25	26" Rail Mill	Geared	1924	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
1537	3000	500	6600	25	26" Rail Mill	Geared	1924	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
1538	3000	505-300	2200	60	12" Merchant Mill	Geared	1920	United Alloy Steel Corporation	Canton, Ohio	W
1539	3100	70-150	600	d.c.	Universal Plate Mill	Direct	1925	International Harvester Co.	Chicago, Ill.	W
1540	3200	50-120	700	d.c.	34" Struct. (Rough). Mill	Direct	1915	Inland Steel Co.	Indiana Harbor, Ind.	W
1541	3200	50-120	700	d.c.	28" Struct. (Fin.) Mill	Direct	1915	Inland Steel Co.	Indiana Harbor, Ind.	W
1542	3200	91	6600	25	18" Merchant Mill	Geared	1909	Illinois Steel Co.	Gary, Ind.	W
1543	3200	91	6600	25	14" Merchant Mill	Geared	1909	Illinois Steel Co.	Gary, Ind.	W
1544	3250	40	500	d.c.	36" Blooming Mill	Direct	1916	American Rolling Mill Co.	Ashland, Ky.	GE
1545	3250	40	500	d.c.	34" Blooming Mill	Direct	1916	Keystone Steel & Wire Co.	Peoria, Ill.	GE
1546	3250	94	6600	25	18" Sheet Bar Mill	Direct	1916	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
1547	3500	50-120	700	d.c.	34" Blooming Mill	Direct	1925	Kokomo Steel & Wire Co.	Kokomo, Ind.	W
1548	3500	50-120	700	d.c.	36" Blooming Mill	Direct	1925	Phoenix Iron Co.	Phoenixville, Pa.	W
1549	3500	50-100	650	d.c.	Rail Mill	Direct	1925	Bethlehem Steel Co.	Steelton, Pa.	GE
1550	3500	70-100	525	d.c.	32" Blooming Mill	Direct	1913	Steel Company of Canada	Hamilton, Ont.	W
1551	3500	50-75	700	d.c.	34" Blooming Mill	Direct	1914	Central Steel Co.	Massillon, Ohio	W
1552	3500	50-120	700	d.c.	35"-Structural Mill	Direct	1924	Bethlehem Steel Co.	Lackawanna, N. Y.	W
1553	3500	50-120	750	d.c.	32" Structural Mill	Direct	1928	Illinois Steel Co.	South Chicago, Ill.	GE
1554	3500	92	2200	60	18" Sheet Bar Mill	Direct	1916	Trumbull Steel Co.	Warren, Ohio	GE
1555	3500	92	2200	60	21" Sheet Bar Mill	Direct	1918	Trumbull Steel Co.	Warren, Ohio	GE
1556	3500	390	2200	60	Continuous Billet Mill	Geared	1920	Steel Co. of Canada	Hamilton, Ont.	W
1557	3500	600	2200	60	Piercing Mill	Geared	1925	Standard Seamless Tube Co.	Economy, Pa.	GE
1558	3600	40-90	600	d.c.	35" Blooming Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	W
1559	3600	40-90	600	d.c.	40" Blooming Mill	Direct	1917	Illinois Steel Co.	Gary, Ind.	W
1560	3600	150-300	250	d.c.	18-14" Structural Mill	Direct	1924	Bethlehem Steel Co.	Lackawanna, N. Y.	AC
1561	3600-1940	290-156	2200	60	21" Cont. Sheet Bar and Skelp Mill	Geared	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	GE
1562	3750	50-130	700	d.c.	Blooming Mill	Direct	1927	Central Alloy Steel Co.	Massillon, Ohio	AC
1563	3750	500	2200	60	112" 3-High Plate Mill	Geared	1925	Lukens Steel Company	Coatesville, Pa.	W
1564	4000	0-150	575	d.c.	36" Universal Plate Mill	Direct	1905	Illinois Steel Co.	South Chicago, Ill.	W
1565	4000	58-120	700	d.c.	34" Blooming Mill	Direct	1924	Donner Steel Co.	Buffalo, N. Y.	GE
1566	4000	58-140	750	d.c.	34" Reversing Blooming	Direct	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
1567	4000	80	650	d.c.	30" Universal Skelp Mill	Direct	1922	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
1568	4000	0 80	1200	d.c.	34" Blooming Mill	Coupled	1912	Algoma Steel Co.	Saulte Ste. Marie, Can	AC
1569	4000	82	6600	60	110" Plate Mill	Direct	1917	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	GE
1570	4000	82	6600	60	110" Plate Mill	Direct	1918	Dominion Iron & Steel Corp.	Sydney, N. S.	GE
1571	4000	83	6600	25	110" Plate Mill	Direct	1916	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
1572	4000	83	6600	25	24" Cont. Billet Mill	Direct	1916	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
1573	4000	83	6600	25	110" Plate Mill	Direct	1917	Carnegie Steel Co.	Homestead, Pa.	GE
1574	4000	83	6600	60	33" Structural Mill	Direct	1920	Carnegie Steel Co.	Homestead, Pa.	GE
1575	4000	83.3	6600	25	26" x 21" Cont. Mill	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	GE
1576	4000	93	6600	60	18" Continuous Bar Mill	Direct	1919	Weirton Steel Co.	Weirton, W. Va.	W
1577	4000	93	6600	60	21" Continuous Bar Mill	Direct	1919	Weirton Steel Co.	Weirton, W. Va.	W

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd By
1578	4000	147	6600	25	20″ Merchant Mill	Geared	1916	Illinois Steel Co.	Gary, Ind.	W
1579	4000	200	6600	60	120″ Plate Mill	Geared	1920	Worth Steel Co.	Claymont, Del.	GE
1580	4000	250–465	240	d.c.	Piercing Mill	Geared	1928	Timken Roller Bearing Co.	Canton, Ohio	GE
1581	4000	360	2200	60	21″ Sheet Bar Mill	Geared	1917	Sharon Steel Hoop Co.	Lowellville, Ohio	GE
1582	4000	375	6600	25	Rail Mill	Geared	1925	Bethlehem Steel Co.	Steelton, Pa.	GE
1583	4000	375	6600	25	10″ Cont. Wire Rod Mill	Geared	1925	Bethlehem Steel Co.	Sparrows Point, Md.	GE
1584	4000	450	2200	60	24″ Continuous Billet Mill	Geared	1927	Carnegie Steel Co.	Farrell, Pa.	W
1585	4200	93	2200	60	Continuous Bar Mill	Direct	1915	United Alloy Steel Corporation	Canton, Ohio	W
1586	4500–4500	67 5–110	500	d.c.	14″ Merchant Mill	Geared	1923	Ford Motor Co.	Detroit, Mich.	GE
1587	4500	120–255	750	d.c.	Univ. Skelp Mill	Coupled	1925	Gary Tube Co.	Gary, Ind.	AC
1588	4500	150–450	600	d.c.	Strip Mill	Geared	1928	Sharon Steel Hoop Co.	Sharon, Pa.	GE
1589	4500	450	2200	60	152″ Plate Mill	Geared	1926	Bethlehem Steel Co.	Coatesville, Pa.	GE
1590	4500–4500	500–300	2200	25	14″ Merchant Mill	Geared	1923	Inland Steel Co.	Indiana Harbor, Ind.	GE
1591	5000	40–120	600	d.c.	40″ Blooming Mill	Direct	1916	National Tube Co.	Lorain, Ohio	W
1592	5000	40–120	600	d.c.	35″ Blooming Mill	Direct	1916	Youngstown Sheet & Tube	Indiana Harbor, Ind.	W
1593	5000	40–120	600	d.c.	35″ Blooming Mill	Direct	1915	United Alloy Steel Corporation	Canton, Ohio	W
1594	5000	50–120	700	d.c.	36″ Rev. Rougher Mill	Direct	1924	Carnegie Steel Co.	Homestead, Pa.	W
1595	500	50–120	900	d.c.	36″ Roughing Mill	Direct	1927	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
1596	5000	50–120	600	d.c.	Blooming Mill	Direct	1928	Aluminum Co. of America	Massena, N. Y.	AC
1597	5000	70–150	900	d.c.	27″ Rev. Hot Strip Mill	Direct	1926	Columbia Steel Co.	Butler, Pa.	GE
1598	5000	75–120	700	d.c.	48″ Universal Plate Mill	Direct	1923	Bethlehem Steel Co.	Lackawanna, N. Y.	W
1599	5000	75–150	700	d.c.	28″ Structural Mill	Direct	1924	Bethlehem Steel Corp.	Lackawanna, N. Y.	W
1600	5000	82	2200	60	21″ Continuous Bar & Billet Mill	Direct	1928	Columbia Steel Co.	Pittsburgh, Cal.	W
1601	5000	82	2200	60	21″ Continuous Bar & Billet Mill	Direct	1928	Columbia Steel Co.	Pittsburgh, Cal.	W
1602	5000	99	13200	60	18″ Billet Mill	Direct	1925	Ford Motor Company	Detroit, Mich.	W
1603	5000	100	2200	60	19″ Cont. Sheet Bar Mill	Direct	1927	Continental Steel Corp.	Kokomo, Ind.	GE
1604	5000	197	2200	60	132″ Plate Mill	Geared	1917	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
1605	5000	240	2200	60	51″ Piercing Mill	Direct	1927	Standard Seamless Tube Co.	Economy, Pa.	GE
1606	5000	370	6600	25	132″ Plate Mill	Geared	1923	Illinois Steel Co.	South Chicago, Ill.	W
1607	5000	370	6600	25	90″ Plate Mill	Geared	1923	Illinois Steel Co.	South Chicago, Ill.	W
1608	5000	450	2300	60	18″ Continuous Sheet Bar and Billet Mill	Geared	1919	Wheeling Steel Corporation	Portsmouth, Ohio	GE
1609	5000–4000–3000	450–360–270	2200	60	16″ Hot Strip Mill	Geared	1925	Trumbull Steel Co.	Warren, Ohio	GE
1610	5000	514	6600	60	18″ Billet Mill	Geared	1928	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
1611	5000	514	6600	60	18″ Sheet Bar Mill	Geared	1928	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
1612	5000	595	6600	60	28″ 3 Stand Rail	Coupled	1921	Tennessee Coal, Iron & R. R. Co.	Birmingham, Ala.	AC
1613	5000	594	6600	60	Sheet & Billet Mill	Geared	1924	Tennessee Coal, Iron & R. R. Co.	Birmingham, Ala.	GE
1614	5500–4400–3400	170–136–105	6600	25	20″ Hot Strip Mill	Direct	1920	Illinois Steel Co.	Gary, Ind.	GE
1615	5500	370	6600	25	16″ Cont. Skelp Mill	Geared	1924	Gary Tube Co.	Gary, Ind.	AC
1616	5610–4500–3370	156-125-93.6	6600	25	12″ Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, O.	GE
1617	5750	94	6600	25	21″ Cont. Billet Mill	Direct	1914	McKinney Steel Co.	Cleveland, Ohio	GE
1618	5750	94	6600	25	18″ Bar Mill	Direct	1915	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
1619	5750	94	6600	25	21″ Bar Mill	Direct	1921	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
1620	5750	94	6600	25	18″ Billet Mill	Geared	1923	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
1621	5750	94	6600	25	21″ Billet Mill	Geared	1923	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
1622	6000	40–120	600	d.c.	44″ Blooming Mill	Direct	1919	Bethlehem Steel Co.	Steelton, Pa.	W
1623	6000	75	6600	25	40″ Rail Mill	Direct	1906	Illinois Steel Co.	Gary, Ind.	GE
1624	6000	75–140	750	d.c.	28″ Structural Mill	Direct	1928	Illinois Steel Co.	South Chicago, Ill.	GE
1625	6000	82	6600	25	28″ Rail Mill	Geared	1914	Minnesota Steel Co.	Duluth, Minn.	W
1626	6000	83	6600	25	28″ Rail Mill	Direct	1906	Illinois Steel Co.	Gary, Ind.	GE
1627	6000	83	6600	25	32″ Billet Mill	Direct	1907	Illinois Steel Co.	Gary, Ind.	GE
1628	6000	83	6600	25	24″ Billet Mill	Direct	1907	Illinois Steel Co.	Gary, Ind.	GE
1629	6000	83	6600	25	18″ Billet Mill	Direct	1907	Illinois Steel Co.	Gary, Ind.	GE
1630	6000	83	6600	25	18″ Sheet Bar Mill	Direct	1910	Illinois Steel Co.	Gary, Ind.	GE
1631	6000	88	6600	25	28″ Rail Mill	Direct	1906	Illinois Steel Co.	Gary, Ind.	GE
1632	6000	98	6600	25	28″–32″ Structural Mill	Direct	1924	Carnegie Steel Co.	Homestead, Pa.	W
1633	6000	794	2200	60	Billet Mill	Geared	1927	Interstate Iron & Steel Co.	Chicago, Ill.	AC
1634	6250	368	2200	25	24″ Cont. Billet Mill	Geared	1922	Inland Steel Co.	Indiana Harbor, Ind.	W
1635	6500	40–120	600	d.c.	40″ Blooming Mill	Direct	1915	Inland Steel Co.	Indiana Harbor, Ind.	W
1636	6500	50	600	d.c.	36″ Blooming Mill	Direct	1916	Trumbull Steel Co.	Warren, Ohio	GE
1637	6500	50	600	d.c.	40″ Blooming Mill	Direct	1916	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
1638	6500	50	600	d.c.	40″ Blooming Mill	Direct	1922	Otis Steel Co.	Cleveland, Ohio	GE
1639	6500	60–140	700	d.c.	35″ Rev. Blooming Mill	Direct	1927	Illinois Steel Co.	So. Chicago, Ill.	W
1640	6500–4500	107–53	6600	25	60″ 3 High Universal Plate Mill	Direct	1909	Illinois Steel Co.	Gary, Ind.	GE
1641	6500	187.5	6600	25	26″ x 21″ Cont.	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	GE
1642	6700–5000–3320	500–375–250	6600	25	26″ x 21″ Cont.	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	GE
1643	7000	40–120	700	d.c.	Blooming Mill	Coupled	1925	Illinois Steel Co.	South Chicago, Ill.	AC
1644	7000	40–80	750	d.c.	54″ Rev. Blooming Mill	Direct	1926	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
1645	7000	0–50–120	700	d.c.	44″ Blooming Mill	Direct	1924	Carnegie Steel Co.	Homestead, Pa.	W
1646	7000	50–120	700	d.c.	40″ Rev. Blooming Mill	Direct	1923	Bethlehem Steel Co.	Lackawanna, N. Y.	W
1647	7000	50–120	700	d.c.	40″ Blooming Mill	Direct	1924	International Harvester Co.	Chicago, Ill.	W
1648	7000	50–120	700	d.c.	36″ Rev. Rougher Mill	Direct	1925	Inland Steel Co.	Indiana Harbor, Ind.	W
1649	7000	50–120	700	d.c.	52″ Structural Mill	Direct	1925	Carnegie Steel Co.	Homestead, Pa.	W
1650	7000	50–120	700	d.c.	52″ Structural Mill	Direct	1925	Carnegie Steel Co.	Homestead, Pa.	W
1651	7000	50–100	650	d.c.	46″ Slabbing Mill	Direct	1925	Bethlehem Steel Co.	Sparrows Point, Md.	GE
1652	7000	0–50–120	700	d.c.	40″ Rev. Blooming Mill	Direct	1926	Forged Steel Wheel Co.	Butler, Pa.	W
1653	7000	50–120	750	d.c.	44″ Blooming Mill	Direct	1927	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
1654	7000	55	900	d.c.	45″ Blooming Mill	Direct	1917	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	GE
1655	7000	50 100	700	d.c.	60″ Universal Plate Mill	Direct	1919	Bethlehem Steel Co.	Sparrows Pt., Md.	W
1656	7000	50–100	750	d.c.	Slabbing Mill	Direct	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
1657	7000	50–120	750	d.c.	40″ Blooming Mill	Direct	1928	Illinois Steel Co.	South Chicago, Ill.	GE
1658	7000	50–130	700	d.c.	40″ Blooming Mill	Direct	1928	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
1659	7000	65–100	750	d.c.	48″ Rev. Structural Mill	Direct	1926	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
1660	7000	65–100	750	d.c.	48″ Rev. Structural Mill	Direct	1926	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
1661	7000	81.7	6600	25	160″ Plate Mill	Direct	1917	Illinois Steel Co.	Gary, Ind.	W
1662	7500–4040	250–134	2200	60	21″ Continuous Sheet Bar and Skelp Mill	Geared	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	GE
1663	7500	375	2200	25	19″ Continuous Mill	Geared	1926	Inland Steel Co.	Indiana Harbor, Ind.	W
1664	8000	40–120	700	d.c.	54″ Blooming Mill	Direct	1925	Carnegie Steel Co.	Homestead, Pa.	W
1665	8000	150	600	d.c.	28″ Rail Mill	Direct	1917	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
1666	8000	240	13200	60	Interrupted Continuous Blooming Mill	Geared	1923	Ford Motor Co.	Detroit, Mich.	GE
1667	9000	107	6600	25	Continuous Billet Bar Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	GE

SYNCHRONOUS MOTORS

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1	300	450	440	60	Copper & Brass Rolling Mill	Geared	1927	New Haven Copper Co.	Seymour, Conn.	EM
2	300	514	440	60	Copper & Brass Rolling Mill	Geared	1928	Dallas Brass & Copper Co.	Chicago, Ill.	EM
3	300	514	440	60	Copper & Brass Rolling Mill	Geared	1924	Dallas Brass & Copper Co.	Chicago, Ill.	EM
4	300	514	440	60	Copper & Brass Rolling Mill	Geared	1924	Dallas Brass & Copper Co.	Chicago, Ill.	EM
5	300	514	440	60	Copper & Brass Rolling Mill	Geared	1924	Dallas Brass & Copper Co.	Chicago, Ill.	EM
6	350	450	2200	60	Tube Rolling Mill	Geared	1925	Pittsburgh Steel Co.	Allenport, Pa.	EM
7	350	514	2200	60	Tube Mill	Geared	1928	Globe Steel Tubes Co.	Milwaukee, Wis.	AC
8	350	514	2200	60	Tube Mill	Geared	1928	Globe Steel Tubes Co.	Milwaukee, Wis.	AC
9	350	720	2200	60	Tube Mill	Geared	1928	Globe Steel Tubes Co.	Milwaukee, Wis.	AC
10	350	720	2200	60	Tube Mill	Geared	1928	Globe Steel Tubes Co.	Milwaukee, Wis.	AC
11	400	277	440	60	Chromel Mill	Direct	1928	Hoskins Mfg. Co.	Detroit, Mich.	W
12	400	277	2200	60	Copper Rod Mill	Direct	1927	Washburn Wire Co.	Phillipsdale, R. I.	AC
13	400	300	440	60	Copper & Brass Rolling Mill	Geared	1928	Dallas Brass & Copper Co.	Chicago, Ill.	EM
14	400	300	440	50	Copper & Brass Rolling Mill	Geared	1927	Dallas Brass & Copper Co.	Chicago, Ill.	EM
15	400	300	440	50	Copper & Brass Rolling Mill	Geared	1927	Dallas Brass & Copper Co.	Chicago, Ill.	EM
16	400	400	2200	60	9" Merchant Mill	Belted	1928	Carpenter Steel Co.	Reading, Pa.	GE
17	400	400	2200	60	Copper Rod Mill	Direct	1927	Washburn Wire Co.	Phillipsdale, R. I.	AC
18	400	450	2200	60	12" Bar Mill	Geared	1924	Atchison, Topeka and Santa Fe R.R	Chicago, Ill.	AC
19	400	450	2200	60	9" Bar Mill	Geared	1924	Atchison, Topeka andSanta Fe R.R	Chicago, Ill.	AC
20	400	514	2200	60	Cold Sheet Mill	Geared	1927	American Rolling Mills Co.	Zanesville, Ohio	W
21	400	600	2300	60	Brass Mill	Geared	1928	Chase Companies, Inc.	Waterville, Conn.	GE
22	400	600	2300	60	Brass Mill	Geared	1928	Chase Companies, Inc.	Waterville, Conn.	GE
23	400	720	4600	60	Copper Mill	Geared	1927	Higgins Brass & Mfg. Co.	Detroit, Mich.	GE
24	400	720	4600	60	Copper Mill	Geared	1927	Higgins Brass & Mfg. Co.	Detroit, Mich.	GE
25	450	720	2200	50	Wire Drawing Bench Mil	Geared	1928	Gulf States Steel Co.	Birmingham, Ala.	W
26	450	720	2200	50	Wire Drawing Bench Mil	Geared	1928	Gulf States Steel Co.	Birmingham, Ala.	W
27	450	720	2200	50	Wire Drawing Bench Mil	Geared	1928	Gulf States Steel Co.	Birmingham, Ala.	W
28	450	720	2200	60	Reeler and Sinking Mill	Geared	1927	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
29	450	720	2200	60	Reeler and Sinking Mill	Geared	1925	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
30	450	720	2200	60	Reeler and Sinking Mill	Geared	1925	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
31	450	720	2200	60	Reeler and Sinking Mill	Geared	1925	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
32	450	720	2200	60	Reeler and Sinking Mill	Geared	1925	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
33	500	120	2200	60	Copper Rod Mill	Direct	1927	Washburn Wire Co.	Phillipsdale, R. I.	AC
34	500	240	2200	50	Cold Roll Mill	Geared	1928	Columbia Steel Corporation	Pittsburgh, Calif.	W
35	500	257	2300	50	Rail Mill	Geared	1928	West Virginia Rail Co.	Huntington, W. Va.	AC
36	500	360	440	50	Brass Mill	Geared	1923	Rome Brass & Copper Co.	Rome, N. Y.	GE
37	500	360	440	50	Brass Mill	Geared	1923	Rome Brass & Copper Co.	Rome, N. Y.	GE
38	500	450	2300	60	Brass Mill	Geared	1928	Chase Companies, Inc.	Waterville, Conn.	GE
39	500	600	2200	60	Sizing Mill	Geared	1913	Cleveland Brass & Copper Co.	Cleveland, O.	AC
40	600	90	440	60	Brass & Nickel Silver Rolling Mill	Direct	1928	Waterbury Rolling Mills	Waterbury, Conn.	EM
41	600	400	2300	60	10" Rod Mill	Direct	1927	Copperweld Steel Co.	Glassport, Pa.	GE
42	600	514	2300	60	8" Rod Mill	Direct	1927	Copperweld Steel Co.	Glassport, Pa.	GE
43	600	600	2200	50	8" Merchant Mill	Geared	1928	Timken Roller Bearing Co.	Canton, Ohio	GE
44	600	900	2300	50	10" Merchant Mill	Geared	1927	Copperweld Steel Co.	Glassport, Pa.	GE
45	800	107	6600	25	Tube Rolling Mill	Direct	1925	National Tube Co.	Lorain, Ohio	AC
46	800	109	2200	50	2-21" Rolls	Direct	1924	Globe Steel Tubes Co.	Milwaukee, Wis.	AC
47	800	300	2300	50	10" Merchant Mill	Geared	1928	Laclede Steel Co.	Madison, Ill.	GE
48	800	450	2200	60	8" Strip Mill	Direct	1928	Superior Steel Co.	Carnegie, Pa.	W
49	800	720	4600	60	Copper Rolling Mill	Geared	1925	Michigan Copper & Brass Co.	Detroit, Mich.	AC
50	800	720	4600	60	Copper Rolling Mill	Geared	1925	Michigan Copper & Brass Co.	Detroit, Mich.	AC
51	800	720	4600	60	Copper Rolling Mill	Geared	1925	Michigan Copper & Brass Co.	Detroit, Mich.	AC
52	800	720	4600	60	Copper Rolling Mill	Geared	1925	Michigan Copper & Brass Co.	Detroit, Mich.	AC
53	800	720	4600	60	Copper Rolling Mill	Geared	1925	Michigan Copper & Brass Co.	Detroit, Mich.	AC
54	850	514	2200	50	14" Rough Mill	Direct	1927	Copper Weld Steel Co.	Glassport, Pa.	W
55	1000	189.5	2200	50	Wire Mill	Direct	1928	American Steel & Wire Co.	Cleveland, Ohio	W
56	1000	225	2300	60	Rail Mill	Geared	1928	West Virginia Rail Co.	Huntington, W. Va.	AC
57	1000	375	6600	25	Piercing Mill	Geared	1925	National Tube Co.	Lorain, O.	AC
58	1200	112.5	2200	50	Tube Mill	Geared	1928	Globe Steel Tubes Co.	Milwaukee, Wis.	AC
59	1200	514	2200	50	8" Merchant Mill	Geared	1928	Timken Roller Bearing Co.	Canton, Ohio	GE
60	1300	257	6600	50	Rod Mill	Direct	1928	Gulf States Steel Co.	Birmingham, Ala.	W
61	1350	600	2300	50	Copper Mill	Geared	1918	American Brass Co.	Waterbury, Conn.	GE
62	1500	62½	6600	25	Tube Rolling Mill	Direct	1927	National Tube Co.	Lorain, Ohio	AC
63	1500	62.5	6600	25	Tube Rolling Mill	Direct	1926	Gary Tube Co.	Gary, Ind.	AC
64	1500	150	6600	60	Wide Strip Mill	Geared	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
65	1500	164	2200	60	Hot Strip Mill	Direct	1928	Danville Structural Steel Co.	Danville, Pa.	EM
66	1500	164	2200	60	Hot Strip Mill	Direct	1928	Danville Structural Steel Co.	Danville, Pa.	EM
67	1750	180	6600	60	Rod Mill	Direct	1928	Gulf States Steel Co.	Birmingham, Ala.	W
68	1750	514	6600	60	Rod Mill	Geared	1928	Gulf States Steel Co.	Birmingham, Ala.	W
69	1800	150	6600	60	Tube Mill	Direct	1928	Pittsburgh Steel Co.	Allenport, Pa.	W
70	2000	180	2200	60	14" Strip Mill	Direct	1928	Superior Steel Co.	Carnegie, Pa.	W
71	2000	200	2200	60	Merchant Mill	Direct	1928	Danville Structural Steel Co.	Danville, Pa.	W
72	2100	720	6600	60	Rod Mill	Geared	1928	Gulf States Steel Co.	Birmingham, Ala.	W
73	2500	80	2200	50	Bar Mill	Direct	1928	Interstate Iron & Steel Co.	Chicago, Ill.	AC
74	2500	257	2200	60	Piercing Mill	Geared	1925	Globe Steel Tubes Co.	Milwaukee, Wis.	AC
75	2750	450	6600	60	Rod Mill	Geared	1928	Gulf States Steel Co.	Birmingham, Ala.	W
76	3000	250	6600	25	Piercing and Expanding Mill	Direct	1927	National Tube Co.	Lorain, Ohio	AC
77	3000	250	6600	25	Piercing and Expanding Mill	Direct	1927	National Tube Co.	Lorain, Ohio	AC
78	4000	83	6600	25	26"-21" Skelp Mill	Direct	1926	Bethlehem Steel Co.	Sparrows Point, Md.	GE
79	4000	450	2200	60	Billet and Bar Mill	Geared	1927	Carnegie Steel Co.	Sharon, Pa.	W
80	5000	82	2200	50	21" Bar and Billet Mill	Direct	1928	Columbia Steel Corporation	Pittsburgh, Calif.	W
81	5000	82	2200	60	21" Bar and Billet Mill	Direct	1928	Columbia Steel Corporation	Pittsburgh, Calif.	W
82	5000	100	2200	60	19" Sheet Bar Mill	Geared	1927	Continental Steel Corp.	Kokomo, Ind.	GE
83	5000	240	2200	60	51" Piercing Mill	Direct	1927	Standard Seamless Tube Co.	Economy, Pa.	GE
84	6500	187	6600	25	26"-21" Skelp Mill	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	GE
85	9000	107	6600	25	22.5"-18" Sheet Bar Mill	Direct	1925	Corrigan-McKinney Steel Co.	Cleveland, Ohio	GE

RAIL AND STRUCTURAL MILL DRIVES

No	Horse Power	R.P.M.	Volt-age	Cycle	Type and Size of Mill	Method of Drive	Date of Pur-chase	Name of Plant	Location	Mfgd. By
1	300	500	220	25	Slitting Mill	Geared	1928	Kalman Steel Co.	Blasdell, N. Y.	GE
2	400	125	230	d.c.	12″ Structural Mill	Direct	1919	Eastern Steel Co.	Pottsville, Pa.	W
3	500	250-600	250	d.c.	12-9″ Mill	Coupled	1925	Bethlehem Steel Co.	Johnstown, Pa.	AC
4	500	257	2300	60	Rail Mill	Geared	1928	West Va. Rail Co.	Huntington, W. Va.	AC
5	600	720	4000	60	Rail Rerolling	Geared	1927	Northern Steel Co.	Medford, Mass.	GE
6	600	885	2300	60	Rail Mill	Geared	1928	West Va. Rail Co.	Huntington, W. Va.	AC
7	750	500	230	d.c.	14″ Rail Rerolling Mill	Geared	1925	Ford Motor Co.	River Rouge, Mich.	AC
8	900	425-640	250	d.c.	12″ 10-Mill	Coupled	1925	Bethlehem Steel Co.	Johnstown, Pa.	AC
9	1000	133	2200	25	Structural (Finish) Mill	Direct	1910	Illinois Steel Co.	South Chicago, Ill.	W
10	1000	200-480	250	d.c.	12-9″ Mill	Geared	1925	Bethlehem Steel Co.	Johnstown, Pa.	AC
11	1000	200-480	250	d.c.	12-9″ Mill	Geared	1925	Bethlehem Steel Co.	Johnstown, Pa.	AC
12	1000-2000	200-400-600	250	d.c.	12-10″ Gautier Mill	Geared	1925	Bethlehem Steel Co.	Johnstown, Pa.	AC
13	1000	225-168	4000	60	Rail Rerolling Mill	Direct	1926	Inland Steel Co.	Indiana Harbor, Ind.	GE
14	1000	225-168	4000	60	Rail Rerolling Mill	Direct	1926	Inland Steel Co.	Indiana Harbor, Ind.	GE
15	1000	225	2300	60	Rail Mill	Geared	1928	West Va. Rail Co.	Huntington, W. Va.	AC
16	1000	590-495	5600	60	24″ Structural Mill	Geared	1917	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	W
17	1000	720	4000	60	18″ 2-Stand Rerolling Rail Mill	Geared	1923	Buckeye Rolling Mill Co.	Newark, Ohio	GE
18	1000	885	2200	60	Rail Rerolling	Geared	1928	Danville Structural	Danville, Ky.	W
19	1200	450	6600	60	Rail Mill, Finishing Stand	Geared	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
20	1200	500	2200	25	28″ Rail Mill	Geared	1914	Bethlehem Steel Co.	Steelton, Pa.	GE
21	1350-1000	214-161	4400	25	Rail Rerolling Mill	Direct	1926	Buffalo Steel Co.	Tonawanda, N. Y.	GE
22	1350-1000	214-161	4400	25	Rail Rerolling Mill	Direct	1926	Buffalo Steel Co.	Tonawanda, N. Y.	GE
23	1500	65-225	750	d.c.	48″ Rev. Structural Mill	Direct	1926	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
24	1500	65-225	750	d.c.	48″ Rev. Structural Mill	Direct	1926	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
25	1500	100-125	220	d.c.	Light Rail Mill	Direct	1905	Carnegie Steel Co.	Bessemer, Pa.	W
26	1500	100-125	220	d.c.	Light Rail Mill	Direct	1905	Carnegie Steel Co.	Bessemer, Pa.	W
27	1500	133-81.5	6600	25	18″ Structural Mill	Direct	1915	Bethlehem Steel Co.	Bethlehem, Pa.	W
28	1500	150-300	250	d.c.	18-14″ Structural Mill	Direct	1924	Bethlehem Steel Corporation	Johnstown, Pa.	AC
29	1500	150-300	250	d.c.	18-14″ Structural Mill	Direct	1924	Bethlehem Steel Corporation	Johnstown, Pa.	AC
30	1500 1250-1000	460-300-240	2200	25	28″ Rail Mill	Geared	1920	Bethlehem Steel Co.	Steelton, Pa.	GE
31	1500	600	2200	60	Light Rail Mill	Geared	1919	West Va. Rail Co.	Huntington, W. Va.	AC
32	1700	250-500	250	d.c.	12-10″ Mill	Geared	1925	Bethlehem Steel Co.	Johnstown, Pa.	AC
33	1750	150-300	230	d.c.	18-14″ Structural Mill	Direct	1924	Bethlehem Steel Corp.	Lackawanna, N. Y.	AC
34	1800	120- 80	2200	25	Light Rail Mill	Direct	1905	Illinois Steel Co.	South Chicago, Ill	W
35	1800	120- 80	2200	25	Light Rail Mill	Direct	1905	Illinois Steel Co.	South Chicago, Ill.	W
36	1800	150-300	250	d.c.	18-14″ Structural Mill	Direct	1924	Bethlehem Steel Co.	Lackawanna, N. Y.	AC
37	1800	366	2200	25	22″ Structural Mill	Geared	1919	Scullin Steel Co.	St. Louis, Mo.	W
38	2000	0-57-163	700	d.c.	52″ Struct. Edging Mill	Direct	1926	Carnegie Steel Co.	Homestead, Pa.	W
39	2000	0-57-163	700	d.c.	52″ Struct. Edging Mill	Direct	1926	Carnegie Steel Co.	Homestead, Pa.	W
40	2000	68	6600	25	28″ Rail Mill	Direct	1906	Illinois Steel Co.	Gary, Ind.	GE
41	2000 2000-2000	100-83.3-65	6500	25	12″ Structural Mill	Direct	1916	Bethlehem Steel Co.	Bethlehem, Pa.	GE
42	2000	200	2200	60	Rail Rerolling	Direct	1928	Danville Structural	Danville, Ky.	W
43	2000	214	6600	25	40″ Rail Mill	Geared	1906	Illinois Steel Co.	Gary, Ind.	GE
44	2000	214	6600	25	40″ Rail Mill	Geared	1906	Illinois Steel Co.	Gary, Ind.	GE
45	2000	450	6600	60	Rail Mill	Geared	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
46	2000	450	6600	60	25″ Structural Mill	Geared	1926	Colorado Fuel & Iron Co.	Minnequa, Col.	GE
47	2000	600	6600	60	Fin. Stand of 24″ Structural Mill	Geared	1924	Tenn. Coal, Iron & R.R. Co.	Fairfield, Ala.	GE
48	2500	82	6600	60	28″ Structural Mill	Direct	1917	Tenn. Coal, Iron & R.R. Co.	Fairfield, Ala.	GE
49	3000	91	2200	25	Structural (Rough.) Mill	Geared	1910	Illinois Steel Co.	South Chicago, Ill.	W
50	3000	150-300	250	d.c.	18-14″ Structural Mill	Direct	1924	Bethlehem Steel Corp.	Johnstown, Pa.	AC
51	3000	150-300	250	d.c.	18-14″ Structural Mill	Direct	1924	Bethlehem Steel Corp.	Johnstown, Pa.	AC
52	3000 3000-3000	155-144-130	6600	60	24″ Structural Mill	Direct	1917	Tenn. Coal, Iron & R.R. Co.	Fairfield, Ala.	GE
53	3000	325-485	600	d.c.	24″ Structural Mill	Geared	1923	Phoenix Iron Co.	Phoenixville, Pa.	W
54	3000	360	6600	60	28″ Rail Mill	Geared	1919	Dominion Iron & Steel Co.	Sydney, N. S.	GE
55	3000	450	6600	60	Rail Mill	Geared	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
56	3000	450	6600	60	25″ Structural Mill	Geared	1926	Colorado Fuel & Iron Co.	Minnequa, Col.	GE
57	3000	500	6600	25	26″ Rail Mill	Geared	1924	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
58	3000	500	6600	25	26″ Rail Mill	Geared	1924	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
59	3200	50-120	700	d.c.	34″ Rev. Struct. (Rough.)	Direct	1915	Inland Steel Co.	Indiana Harbor, Ind.	W
60	3200	50-120	700	d.c.	28″ Structural (Fin.) Mill	Direct	1915	Inland Steel Co.	Indiana Harbor, Ind.	W
61	3500	50-120	700	d.c.	35″ Struct. Mill (Rough.)	Direct	1924	Bethlehem Steel Corp.	Lackawanna, N. Y.	W
62	3500	50-100	650	d.c.	Rail Mill	Direct	1925	Bethlehem Steel Co.	Steelton, Pa.	GE
63	3500	50-120	750	d.c.	32″ Structural Mill	Direct	1928	Illinois Steel Co.	So. Chicago, Ill.	GE
64	3500	150-300	230	d.c.	18-14″ Structural Mill	Direct	1924	Bethlehem Steel Corp.	Lackawanna, N. Y.	AC
65	3600	150-300	250	d.c.	18-14″ Structural Mill	Direct	1924	Bethlehem Steel Co.	Lackawanna, N. Y.	AC
66	4000	83	6600	60	33″ Structural Mill	Direct	1920	Carnegie Steel Co.	Homestead, Pa.	GE
67	4000	375	6600	25	Rail Mill	Geared	1925	Bethlehem Steel Co.	Steelton, Pa.	GE
68	5000	50-120	700	d.c.	36″ Struct. (Rough.) Mill	Direct	1924	Carnegie Steel Co.	Homestead, Pa.	W
69	5000	50-120	900	d.c.	36″ Roughing Mill	Direct	1927	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
70	5000	75-150	700	d.c.	28″ Structural (Fin.) Mill	Direct	1924	Bethlehem Steel Corp.	Lackawanna, N. Y.	W
71	5000	595	6600	60	28″ 3 Stand Rail Mill	Coupled	1921	Tenn. Coal, Iron & R.R. Co.	Birmingham, Ala.	AC
72	6000	75	6600	25	40″ Rail Mill	Direct	1906	Illinois Steel Co.	Gary, Ind.	GE
73	6000	75-140	750	d.c.	28″ Structural Mill	Direct	1928	Illinois Steel Co.	So. Chicago, Ill.	GE
74	6000	83	6600	25	28″ Rail Mill	Direct	1906	Illinois Steel Co.	Gary, Ind.	GE
75	6000	83	6600	25	28″ Rail Mill	Geared	1913	Minnesota Steel Co.	Duluth, Minn.	W
76	6000	88	6600	25	28″ Rail Mill	Direct	1906	Illinois Steel Co.	Gary, Ind.	GE
77	6000	98	6600	25	28″-32″ Structural Mill	Direct	1924	Carnegie Steel Co.	Homestead, Pa.	W
78	7000	50-150	700	d.c.	52″ Structural Mill	Direct	1925	Carnegie Steel Co.	Homestead, Pa.	W
79	7000	50-150	700	d.c.	52″ Structural Mill	Direct	1925	Carnegie Steel Co.	Homestead, Pa.	W
80	7000	65-100	750	d.c.	48″ Rev. Structural Mill	Direct	1926	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
81	7000	65-100	750	d.c.	48″ Rev. Structural Mill	Direct	1926	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
82	8000	150	600	d.c.	28″ Rail Mill	Direct	1917	Bethlehem Steel Co.	Lackawanna, N. Y.	GE

PLATE MILL DRIVES

No.	Horse Power	R.P.M.	Volt-age	Cycle	Type and Size of Mill	Method of Drive	Date of Pur-chase	Name of Plant	Location	Mfgd. By
1	300	575	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
2	300	575	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
3	300	575	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
4	300	575	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
5	300	575	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
6	300	575	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
7	300	575	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
8	500	200	500	d.c.	78″ Rev. Brass Plate Mill	Geared	1920	West Virginia Metal Products Co.	Fairmont, W. Va.	W
9	500	575	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
10	500	575	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
11	600	885	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
12	600	885	2200	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W

PLATE MILL DRIVES—Continued

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
13	800	20	230	d.c.	32″ x 48″ Plate Mill	Coupled	1910	American Sheet & Tin Plate Co.	Gary, Ind.	W
14	800	20	230	d.c.	32″ x 48″ Plate Mill	Coupled	1910	American Sheet & Tin Plate Co.	Gary, Ind.	CW
15	800	0-37-70	500	d.c.	Plate Mill	Coupled	1919	Universal Rolling Mill Co.	Bridgeville, Pa.	CAC
16	1000	50-175	600	d.c.	24″ Rev. Universal Plate	Direct	1916	Central Steel Co.	Massillon, Ohio	W
17	1000	375	2200	25	54″ Plate Mill	Geared	1927	Alan Wood Iron & Steel Co.	Conshohocken, Pa.	GE
18	1100-1500	91	2200	25	84″ Plate (Finishing) Mill	Direct	1909	American Sheet & Tin Plate Co.	Gary, Ind.	W
19	1200	25-50	330	d.c.	Reversing Plate Mill	Direct	1926	Lukens Steel Co.	Coatesville, Pa.	GE
20	1200	214	2200	25	84″ Plate mill	Geared	1913	Otis Steel Co.	Cleveland, Ohio	GE
21	1200	500	2200	25	72″ Jobbing Plate Mill	Geared	1926	Alan Wood Iron & Steel Co.	Coshocton, Pa.	GE
22	1600	214	2200	25	84″ Plate Mill	Geared	1913	Otis Steel Co.	Cleveland, Ohio	GE
23	1600	244	2200	25	84″ Plate (Rough.) Mill	Geared	1912	Alan Wood Iron & Steel Co.	Ivy Rock, Pa.	W
24	1600	244	2200	25	84″ Plate (Finishing) Mill	Geared	1912	Alan Wood Iron & Steel Co.	Ivy Rock, Pa.	W
25	1800	40	600	d.c.	84″ Reversing Plate Mill	Direct	1917	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
26	2000	83	6600	25	96″ Plate Mill	Coupled	1918	Youngstown Sheet & Tube Co.	Youngstown, O.	AC
27	2000	83	6600	25	84″ Plate Mill	Coupled	1918	Youngstown Sheet & Tube Co.,	Youngstown, O.	AC
28	2000	214	2200	25	Jobbing plate mill	Geared	1925	Otis Steel Co.	Cleveland, Ohio	W
29	2000	244	2200	25	90″ Plate Mill	Rope	1912	Inland Steel Co.	Indiana Harbor, Ind.	W
30	2000	375	2200	25	84″ Plate Mill	Geared	1916	Donner Steel Co.	Buffalo, N. Y.	GE
31	2000	505	6600	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
32	2000	505	6600	60	Plate Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
33	2100	50-125	700	d.c.	42″ Rev. Univ. Plate Mill	Direct	1916	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	W
34	2200	50-120	600	d.c.	40″ Rev. Univ. Plate Mill	Direct	1919	Dominion Foundrys & Steel Co.	Hamilton, Ont.	W
35	2500	53-80	660	d.c.	Reversing Plate Mill	Direct	1926	Lukens Steel Co.	Coatesville, Pa.	GE
36	2500	235	2200	60	84″ Plate (Finishing) Mill	Geared	1917	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
37	3000	245	2200	25	90″ Plate Mill	Geared	1920	Inland Steel Co.	Indiana Harbor, Ind.	W
38	3000	235	2200	60	100″ Plate Mill	Geared	1922	Nat'l Enameling & Stamping Co.	St. Louis, Mo.	W
39	3100	70-150	600	d.c.	Universal Plate Mill	Direct	1925	International Harvester Co.	Chicago, Ill.	W
40	3750	500	2200	60	112″ 3 High Plate Mill	Geared	1925	Lukens Steel Company	Coatesville, Pa.	W
41	4000	0-150	575	d.c.	36″ Rev. Univ. Plate Mill	Direct	1905	Illinois Steel Co.	South Chicago, Ill.	W
42	4000	82	6600	60	110″ Plate Mill	Direct	1917	Tenn. Coal, Iron & R. R. Co.	Fairfield, Ala.	GE
43	4000	83	6600	25	110″ Plate Mill	Direct	1916	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
44	4000	83	6600	25	110″ Plate Mill	Direct	1917	Carnegie Steel Co.	Homestead, Pa.	GE
45	4000	82	6600	60	110″ Plate Mill	Direct	1918	Dominion Iron & Steel Corp.	Sydney, N. S.	GE
46	4000	200	6600	60	120″ Plate Mill	Geared	1920	Worth Steel Co.	Claymont, Del.	GE
47	4500	450	2200	60	152″ Plate Mill	Geared	1926	Bethlehem Steel Co.	Coatesville, Pa.	GE
48	5000	75-100	700	d.c	48″ Rev. Univ. Plate Mill	Direct	1923	Bethlehem Steel Co.	Lackawanna, N. Y.	W
49	5000	197	2200	60	132″ Plate Mill	Geared	1917	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
50	5000	370	6600	25	132″ Plate Mill	Geared	1922	Illinois Steel Co.	South Chicago, Ill.	W
51	5000	370	6600	25	90″ Plate Mill	Geared	1922	Illinois Steel Co.	South Chicago, Ill.	W
52	6500-4500	107-53	6600	25	60″ 3 High Univ. Plate	Direct	1909	Illinois Steel Co.	Gary, Ind.	GE
53	7000	0-100	700	d.c.	60″ Rev. Univ. Plate Mill	Direct	1919	Bethlehem Steel Co.	Sparrows Point, Md.	W
54	7000	81.7	6600	25	160″ Plate Mill	Direct	1916	Illinois Steel Co.	Gary, Ind.	W

BLOOMING MILL DRIVES

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1	500	190	230	d.c.	24″ Blooming Mill	Geared	1910	Sharon Steel Hoop Co.	Sharon, Pa.	GE
2	600	720	2200	50	18″ Breakdown Mill	Geared	1928	Kilby Car & Foundry Co.	Anniston, Ala.	GE
2	800-800-800	720-600-480	2200	60	3-High Blooming Mill	Geared	1927	Copperweld Steel Co.	Glassport, Pa.	GE
3	850	710	2200	60	20″ Blooming Mill	Geared	1923	Washburn Wire Co.	Phillipsdale, R. I.	W
4	1200	585	2200	60	24″ Blooming Mill	Geared	1919	McConway Torley Co.	Pittsburgh, Pa.	W
5	1500	355	2200	60	35″ Blooming Mill	Geared	1924	Timken Roller Bearing Co.	Canton, Ohio	W
6	1500	375	2200	25	36″ 3 High Blooming Mill	Geared	1920	Atlas Crucible Steel Co.	Dunkirk, N. Y.	GE
7	1650	112.5-270	750	d.c.	Slabbing Mill	Direct	1928	Wheeling Steel Corporation	Steubenville, O.	GE
8	2000	75	2200	25	Blooming Mill	Direct	1916	Wickwire Spencer Steel Co.	Buffalo, N. Y.	GE
9	2000	240	2200	60	32″ Blooming Mill	Geared	1915	Mansfield Sheet & Tin Plate Co.	Mansfield, Ohio	GE
10	2100	47-120	700	d.c.	34″ Rev. Blooming Mill	Direct	1916	Penn Seaboard Steel Corporation	New Castle, Del.	W
11	2200	70-150	600	d.c.	28″ Rev. Blooming Mill	Direct	1920	Atlantic Steel Co.	Atlanta, Ga.	W
12	2900	47-120	700	d.c	34″ Rev. Blooming Mill	Direct	1917	Sharon Steel Hoop Co.	Youngstown, Ohio	W
13	3250	40	500	d.c.	36″ Blooming Mill	Direct	1916	American Rolling Mill Co.	Ashland, Ky.	GE
14	3250	40	500	d.c.	34″ Blooming Mill	Direct	1916	Keystone Steel & Wire Co.	Peoria, Ill.	GE
15	3500	70-100	525	d.c.	32″ Rev. Blooming Mill	Direct	1913	Steel Company of Canada	Hamilton, Ont.	W
16	3500	50- 75	700	d.c.	34″ Rev. Blooming Mill	Direct	1914	Central Steel Co.	Massillon, Ohio	W
17	3500	50-120	700	d.c.	34″ Blooming Mill	Direct	1925	Kokomo Steel & Wire Co.	Kokomo, Ind.	W
18	3500	50-120	700	d.c.	36″ Blooming Mill	Direct	1925	Phoenix Iron Co.	Phoenixville, Pa.	W
19	3600	40- 90	600	d.c.	35″ Rev. Blooming Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	W
20	3600	40- 90	600	d.c.	40″ Rev. Blooming Mill	Direct	1918	Illinois Steel Co.	Gary, Ind.	W
21	3750	50-130	700	d.c.	Blooming Mill	Direct	1927	Central Alloy Steel Co.	Massillon, Ohio	AC
22	4000	58-140	750	d.c.	34″ Reversing Blooming	Direct	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
23	4000	0- 80	1200	d.c.	34″ Blooming Mill	Coupled	1912	Algoma Steel Co.	Sault Ste. Marie,Can.	AC
24	5000	30-120	600	d.c.	40″ Rev. Blooming Mill	Direct	1916	National Tube Co.	Lorain, Ohio	W
25	5000	50-120	600	d.c.	35″ Rev. Blooming Mill	Direct	1915	United Alloy Steel Corporation	Canton, Ohio	W
26	5000	50-120	600	d.c.	Blooming Mill	Direct	1928	Aluminum Co. of America	Massena, N. Y.	AC
27	5000	40-120	600	d.c.	35″ Rev. Blooming Mill	Direct	1916	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	W
28	6500	40-120	600	d.c.	40″ Rev. Blooming Mill	Direct	1915	Inland Steel Co.	Indiana Harbor, Ind.	W
29	6500	50	600	d.c.	36″ Blooming Mill	Direct	1916	Trumbull Steel Co.	Warren, Ohio	GE
30	6500	50	600	d.c.	40″ Blooming Mill	Direct	1916	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
31	6500	50	600	d.c.	40″ Blooming Mill	Direct	1922	Otis Steel Co.	Cleveland, Ohio	GE
32	6500	60-140	700	d.c.	35″ Rev. Blooming Mill	Direct	1927	Illinois Steel Co.	So. Chicago, Ill.	W
33	7000	40-120	700	d.c.	Blooming Mill	Coupled	1925	Illinois Steel Co.	South Chicago, Ill.	AC
34	7000	50-120	700	d.c.	40″ Rev. Blooming Mill	Direct	1923	Bethlehem Steel Co.	Lackawanna, N. Y.	W
35	7000	50-120	700	d.c.	44″ Blooming Mill	Direct	1924	Carnegie Steel Co.	Homestead, Pa.	W
36	7000	50-120	700	d.c.	40″ Blooming Mill	Direct	1924	International Harvester Co., Wisconsin Steel	Chicago, Ill.	W
37	7000	50-120	700	d.c.	36″ Rev. Rougher Mill	Direct	1925	Inland Steel Co.	Indiana Harbor, Ind.	W
38	7000	50-100	650	d.c.	46″ Slabbing Mill	Direct	1925	Bethlehem Steel Co.	Sparrows Point, Md.	GE
39	7000	0-50-120	700	d.c.	40″ Rev. Blooming Mill	Direct	1926	Forged Steel Wheel Co.	Butler, Pa.	W
40	7000	40-80	750	d.c.	54″ Rev. Blooming Mill	Direct	1926	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
41	7000	50-120	750	d.c.	44″ Blooming Mill	Direct	1927	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
42	7000	50-130	700	d.c.	40″ Blooming Mill	Direct	1928	Youngstown Sheet & Tube Co.	Youngstown, O.	W
43	7000	50-120	750	d.c.	40″ Blooming Mill	Direct	1928	Illinois Steel Co.	So. Chicago, Ill.	GE
44	7000	50-100	750	d.c.	Slabbing Mill	Direct	1928	Wheeling Steel Corporation	Steubenville, O.	GE
45	7000	55	900	d.c.	45″ Blooming Mill	Direct	1917	Tenn. Coal, Iron & R. R. Co.	Fairfield, Ala.	GE
46	8000	40-120	700	d.c.	54″ Blooming Mill	Direct	1925	Carnegie Steel Co.	Homestead, Pa.	W
47	8000	240	13200	60	Interrupted Continuous Blooming Mill	Geared	1923	Ford Motor Co.	Detroit, Mich.	G-

SHEET AND TIN PLATE DRIVES

No.	Horse Power	R.P.M.	Voltage	Current	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1	300	250	440	25	Sheet Mill	Geared	1910	Simonds Mfg. Co.	Lockport, N. Y.	GE
2	300	325–650	220	d.c.	Sheet Mill		1919	Aluminum Co. of America	New Kensington, Pa.	AC
3	300	505	2200	60	20″ Sheet & Strip Jobbing Mill	Geared	1926	Indiana Rolling Mill Co.	New Castle, Ind.	W
4	300	505	2200	60	20″ Sheet & Strip Jobbing Mill	Geared	1926	Indiana Rolling Mill Co.	New Castle, Ind.	W
5	350	320	2200	60	Sheet Mill	Geared	1917	Universal Steel Co.	Bridgeville, Pa.	W
6	350	400–600	220	d.c.	Hot Mill	Geared	1913	Bethlehem Steel Corp.	Lackawanna, N. Y.	CW
7	350	400–600	220	d.c.	Hot Mill	Geared	1913	Bethlehem Steel Corp.	Lackawanna, N. Y.	CW
8	350	485	2200	25	Cont. Sheet Mill	Geared	1926	American Sheet & Tin Plate Co.	Gary, Ind.	AC
9	350	485	2200	25	Cont. Sheet Mill	Geared	1926	American Sheet & Tin Plate Co.	Gary, Ind.	AC
10	400	360	2300	60	Sheet Mill, Cold Rolls	Geared	1925	Thomas Sheet Steel Co.	Niles, Ohio	GE
11	500	300	2200	60	Sheet Mill		1915	U. S. Aluminum Co.	New Kensington, Pa.	AC
12	500	300	2200	60	Sheet Mill		1915	U. S. A uminum Co.	New Kensington, Pa.	AC
13	500	300	2200	60	Sheet Mill		1915	U. S. Aluminum Co.	New Kensington, Pa.	AC
14	500	450	2200	60	Sheet Mill	Geared	1915	American Brass Co.	Torrington, Conn.	GE
15	500	600	2200	60	Continuous Sheet Mill	Geared	1926	American Rolling Mill Co.	Ashland, Ky.	W
16	600	290	2200	25	60″ Sheet Jobbing Mill	Geared	1927	Allanwood Iron & Steel Co.	Conshochocton, Pa.	W
17	600	300	2200	60	Sheet Mill	Geared	1917	Universal Rolling Mill Co.	Bridgeville, Pa.	AC
18	600	585	2200	60	Sheet Mill	Geared	1928	American Rolling Mill Co.	Ashland, Ky.	W
19	700	320	2200	60	Sheet and Jobbing Mill	Direct	1917	Carbon Steel Co.	Pittsburgh, Pa.	W
20	750	94	2200	25	Sheet Mill	Rope	1912	West Penn Steel Co.	Brackenridge, Pa.	GE
21	750	250	2200	60	Tin Mill	Geared	1914	Weirton Steel Co.	Weirton, W. Va.	W
22	800	214	2200	25	Sheet Mill	Geared	1919	Am. Sheet & Tin Plate Co.	Gary, Ind.	GE
23	800	214	2200	25	Sheet Mill	Geared	1919	Am. Sheet & Tin Plate Co.	Gary, Ind.	GE
24	800	600	2200	60	Hot & Cold Sheet Mill	Geared	1924	American Nickel Co.	Clearfield, Pa.	GE
25	900	94	2200	25	Jobbing Sheet Mill	Rope	1910	Am. Sheet & Tin Plate Co.	Gary, Ind.	GE
26	900	94	2200	25	Jobbing Sheet Mill	Rope	1910	Am. Sheet & Tin Plate Co.	Gary, Ind.	GE
27	1000	83	2200	25	Sheet Mill	Rope	1910	Follansbee Bros.	Follansbee, W. Va.	GE
28	1000	235	2200	60	Cold Rolled Tin Mill	Coupled	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	AC
29	1000	235	2200	60	Cold Rolled Tin Mill	Coupled	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	AC
30	1000	240	440	60	Sheet Mill	Geared	1918	Robertson Iron & Steel Co.	Springfield, Ohio	AC
31	1000	245	2200	25	30″ Sheet Mill	Rope	1910	American Rolling Mill Co.	Middletown, Ohio	W
32	1000	250	6600	25	Sheet Mill	Geared	1919	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
33	1000	250	6600	25	Sheet Mill	Geared	1919	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
34	1000	250	6000	25	Tin Mill	Geared	1919	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
35	1000	250	6600	25	Tin Mill	Geared	1919	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
36	1000	250	2200	25	Sheet Mill	Geared	1920	Otis Steel Co.,	Cleveland, Ohio	AC
37	1000	250	2200	25	Sheet Mill	Geared	1920	Otis Steel Co.	Cleveland, Ohio	AC
38	1000	252	2200	60	Sheet Mill	Geared	1920	American Rolling Mill Co.	Zanesville, Ohio	W
39	1000	300	2200	60	Sheet Mill	Geared	1919	Superior Sheet Steel Co.	Canton, Ohio	GE
40	1000	300	2200	60	Sheet Mill	Geared	1919	Superior Sheet Steel Co.	Canton, Ohio	GE
41	1000	300	2200	60	Sheet Mill	Geared	1920	Milwaukee Rolling Mills Co.	Milwaukee, Wis.	GE
42	1000	300	2200	60	Sheet Mill	Geared	1920	Milwaukee Rolling Mills Co.	Milwaukee, Wis.	GE
43	1000	300	2200	60	Sheet Mill	Geared	1925	Sharon Steel Hoop Co.	Sharon, Pa.	CW
44	1000	300	2200	60	Sheet Mill	Geared	1925	Sharon Steel Hoop Co.	Sharon, Pa.	CW
45	1000	300	2200	60	Sheet Mill	Geared	1925	Sharon Steel Hoop Co.	Sharon, Pa.	CW
46	1000	333	2200	50	36″ Sheet Mill	Geared	1927	Columbia Steel Co.	Torrance, Calif.	GE
47	1000	600	2200	60	Sheet Mill	Geared	1925	American Nickel Corp.	Clearfield, Pa.	GE
48	1150	250	6600	25	Jobbing Sheet Mill	Geared	1913	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
49	1200	214	2200	25	Jobbing Sheet Mill	Geared	1913	Otis Steel Co.	Cleveland, Ohio	GE
50	1200	240	2200	60	Sheet Mill	Geared	1915	Empire Rolling Mills	Cleveland, Ohio	GE
51	1200	240	2200	60	Sheet Mill	Geared	1916	Mahoning Valley Steel Co.	Niles, Ohio	GE
52	1200	240	2200	60	Sheet Mill	Geared	1916	United Alloy Steel Corp.	Canton, Ohio	GE
53	1200	240	2200	60	Sheet Mill	Geared	1917	United Alloy Steel Corp.	Canton, Ohio	GE
54	1200	240	2200	60	Sheet Mill	Geared	1920	Republic Iron & Steel Co.	Youngstown, Ohio	GE
55	1200	240	2200	60	Sheet Mill	Geared	1920	Republic Iron & Steel Co.	Youngstown, Ohio	GE
56	1200	240	440	25	26″ Sheet Mill	Rope	1907	Seneca Iron & Steel Co.	Buffalo, N. Y.	W
57	1200	240		60	Hot Sheet Mill	Coupled	1915	Standard Tin Plate Company	Canonsburg, Pa.	CW
58	1200	240		60	Hot Sheet Mill	Coupled	1915	Standard Tin Plate Company	Canonsburg, Pa.	CW
59	1200	240		60	Hot Sheet Mill	Coupled	1915	Standard Tin Plate Company	Canonsburg, Pa.	CW
60	1200	240		60	Hot Sheet Mill	Coupled	1916	Standard Tin Plate Company	Canonsburg, Pa.	CW
61	1200	240		60	Hot Sheet Mill	Coupled	1916	Standard Tin Plate Company	Canonsburg, Pa.	CW
62	1200	244	2200	25	Sheet Mill	Geared	1916	Bethlehem Steel Co.	Sparrows Pt., Md.	W
63	1200	244	2200	25	Sheet Mill	Geared	1916	Bethlehem Steel Co.	Sparrows Pt., Md.	W
64	1200	244	2200	25	Sheet Mill	Geared	1920	American Rolling Mill Co.	Middletown, Ohio	W
65	1200	244	2200	25	Sheet Mill	Geared	1920	American Rolling Mill Co.	Middletown, Ohio	W
66	1200	244	2200	25	Sheet Mill	Geared	1926	American Rolling Mills Co.	Middletown, Ohio	W
67	1200	244	2200	25	Sheet Mill	Geared	1926	American Rolling Mills Co.	Middletown, Ohio	W
68	1200	277	2200	60	Sheet Mill	Geared	1925	Wheeling Steel Corp.	Wheeling, W. Va.	GE
69	1200	295	6600	60	Sheet Mill	Coupled	1922	Weirton Steel Co.	Weirton, W. Va.	AC
70	1200	295	6600	60	Sheet Mill	Coupled	1922	Weirton Steel Co.	Weirton, W. Va.	AC
71	1200	300	4100	60	Sheet Mill	Geared	1920	Chapman Price Steel Co.	Indianapolis, Ind.	GE
72	1200	300	2200	60	Sheet Mill	Geared	1920	Central Steel Co.	Massillon, Ohio	GE
73	1200	300	2200	60	Sheet Mill	Geared	1920	Central Steel Co.	Massillon, Ohio	GE
74	1200	300	2200	60	Sheet Mill	Geared	1924	Thomas Sheet Steel Co.	Niles, Ohio	GE
75	1200	300	2200	60	Sheet Mill	Geared	1924	Thomas Sheet Steel Co.	Niles, Ohio	GE
76	1200	352	2200	60	Sheet Mill	Rope	1917	Mansfield Sheet & Tin Plate Co.	Mansfield, Ohio	W
77	1250	250	6600	25	Hot Tin Mill	Geared	1924	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
78	1250	250	6600	25	Hot Tin Mill	Geared	1924	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
79	1250	250	6600	25	Cold Tin Mill	Geared	1924	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
80	1250	250	6600	25	Hot Tin Mill	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	GE
81	1250	250	6600	25	Hot Tin Mill	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	GE
82	1250	250	6600	25	Cold Tin Mill	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	GE
83	1250	250	6600	25	Sheet Mill	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	GE
84	1400	240	2200	60	Sheet Mill	Geared	1912	Apollo Steel Co.	Apollo, Pa.	GE
85	1500	187	2200	25	Sheet Mill	Chain	1914	National Enamel & Stamp. Co.	Granite City, Ill.	AC
86	1500	210	2200	25	30″ Sheet Mill	Rope	1910	American Rolling Mill Co.	Middletown, Ohio	W
87	1500	234	2200	60	Sheet Mill	Geared	1915	Canton Sheet Steel Co.	Canton, Ohio	W
88	1500	234	2200	60	Sheet Mill	Geared	1916	Mansfield Sheet & Tin Plate Co.	Mansfield, Ohio	W
89	1500	234	2200	60	Sheet Mill	Geared	1917	Liberty Steel Co.	Warren, Ohio	W
90	1500	234	2200	60	Sheet Mill	Geared	1919	Mansfield Sheet & Tin Plate Co.	Mansfield, Ohio	W
91	1500	240	2200	60	Sheet Mill	Geared	1922	United Alloy Steel Corp.	Canton, Ohio	GE
92	1500	240	2200	60	Sheet Mill	Geared	1919	Follensbee Bros.	Toronto, Ohio	AC
93	1500	240	2200	60	Sheet Mill	Geared	1919	Follensbee Bros.	Toronto, Ohio	AC
94	1500	240	2200	60	Sheet Mill	Geared	1920	Canton Sheet Steel Co.	Canton, Ohio	AC
95	1500	250	2200	25	Sheet Mill	Geared	1919	Eastern Rolling Mills Co.	Baltimore, Md.	GE
96	1500	250	2200	25	Sheet Mill	Geared	1919	Eastern Rolling Mills Co.	Baltimore, Md.	GE
97	1500	270	2200	60	Sheet Mill	Geared	1914	Youngstown Sheet & Tube Co.	Warren, Ohio	W
98	1500	295	2200	60	Sheet Mill	Geared	1924	Kansas City Bolt & Nut Co.	Kansas City, Mo.	AC
99	1500	300	4600	60	Sheet Mill	Geared	1922	Michigan Steel Corp.	Detroit, Mich.	GE
100	1500	300	4600	60	Sheet Mill	Geared	1924	Michigan Steel Corp.	Detroit, Mich.	GE
101	1500	360	4000	60	Sheet Mill	Geared	1923	Pacific Coast Steel Corp.	So.San Francisco,Cal.	GE
102	1500	360	2200	60	Sheet Mill	Geared	1923	Columbia Steel Co.	Pittsburgh, Cal.	GE
103	1600	94	2200	25	Sheet Mill	Rope	1910	American Sheet & Tin Plate Co.	Gary, Ind.	GE
104	1600	94	2200	25	Sheet Mill	Rope	1910	American Sheet & Tin Plate Co.	Gary, Ind.	GE
105	1600	94	2200	25	Sheet Mill	Rope	1913	American Sheet & Tin Plate Co.	Gary, Ind.	GE
106	1600	94	2200	25	Sheet Mill	Rope	1913	American Sheet & Tin Plate Co.	Gary, Ind.	GE
107	1600	94	2200	25	Tin Mill	Rope	1915	McKeesport Tin Plate Co.	McKeesport, Pa.	GE

SHEET AND TIN PLATE DRIVES—Continued

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd By
108	1600	94	2200	25	Tin Mill	Rope	1915	McKeesport Tin Plate Co.	McKeesport, Pa.	GE
109	1600	94	2200	25	Tin Mill	Rope	1915	McKeesport Tin Plate Co.	McKeesport, Pa.	GE
110	1600	94	2200	25	Tin Mill	Rope	1915	McKeesport Tin Plate Co.	McKeesport, Pa.	GE
111	1600	210	2200	25	Sheet Mill	Geared	1912	Inland Steel Co.	Indiana Harbor, Ind.	W
112	1600	240	2200	60	Sheet Mill	Geared	1919	Falcon Steel Co.	Niles, Ohio	GE
113	1600	250	440	25	Sheet Mill	Geared	1914	Seneca Iron & Steel Co.	Buffalo, N. Y.	GE
114	1600	270	2200	60	Sheet Mill	Geared	1916	Wheeling Steel Corporation	Wheeling, W Va.	W
115	1600	270	2200	60	Sheet Mill	Geared	1916	Wheeling Steel Corporation	Portsmouth, Ohio	W
116	1700	214	2200	25	Sheet Mill	Geared	1915	American Sheet & Tin Plate Co.	Gary, Ind.	GE
117	1700	214	2200	25	Tin Mill	Geared	1915	American Sheet & Tin Plate Co.	Gary, Ind.	GE
118	1700	214	2200	25	Tin Mill	Geared	1915	American Sheet & Tin Plate Co.	Gary, Ind.	GE
119	1700	214	2200	25	Tin Mill	Geared	1918	American Sheet & Tin Plate Co.	Gary, Ind.	GE
120	1700	214	2200	25	Tin Mill	Geared	1918	American Sheet & Tin Plate Co.	Gary, Ind.	GE
121	1700	214	2200	25	Tin Mill	Geared	1918	American Sheet & Tin Plate Co.	Gary, Ind.	GE
122	1700	214	2200	25	Tin Mill	Geared	1919	American Sheet & Tin Plate Co.	Gary, Ind.	GE
123	1700	250	440	25	Hot Sheet Mill	Geared	1925	Seneca Iron & Steel Co.	Buffalo, N. Y.	GE
124	1800	235	2200	60	Sheet Mill	Geared	1915	Trumbull Steel Co.	Warren, Ohio	W
125	1800	240	2200	60	Sheet Mill	Geared	1920	Apollo Steel Co.	Apollo, Pa.	GE
126	1800	253	2200	60	Eight Stand Tin Mill	Coupled	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	AC
127	1800	252	2200	60	Hot Tin Mi	Geared	1928	Columbia Steel Co.	Pittsburgh, Cal.	W
128	1800	270	2200	60	Sheet Mill	Geared	1916	Andrews Steel Co.	Newport, Ky.	W
129	1800	270	2200	60	Sheet Mill	Geared	1916	Andrews Steel Co.	Newport, Ky.	W
130	1800	295	2200	60	32″ Hot Roll Sheet Mill	Geared	1926	American Sheet & Tin Plate Co.	Monnessen, Pa.	AC
131	2000	230–460	600	d.c.	Sheet Mill	Geared	1926	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
132	2000	234	2200	60	Sheet Mill	Geared	1919	Newton Steel Co.	Newton Falls, Ohio	W
133	2000	235	2200	60	Tin Mill	Geared	1920	Nat. Enameling & Stamping Co.	St. Louis, Mo.	W
134	2000	234	2200	60	Sheet Mill	Geared	1921	Newton Steel Co.	Newton Falls, Ohio	W
135	2000	234	2200	60	Sheet Mill	Geared	1923	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
136	2000	240	2200	60	Sheet Mill	Geared	1919	Republic Iron & Steel Co.	Niles, Ohio	GE
137	2000	250	6600	25	Sheet Mill	Geared	1920	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
138	2000	250	6600	25	Sheet Mill	Geared	1920	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
139	2000	300	2200	60	Sheet Mill	Geared	1926	American Sheet & Tin Plate Co.	Scottdale, Pa.	GE
140	2000	600	6600	60	Sheet Mill	Geared	1924	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	GE
141	2500	160–320	600	d.c.	Continuous Sheet Mill	Geared	1926	American Sheet & Tin Plate Co.	Gary, Ind.	W
142	2500	160–320	600	d.c.	Continuous Sheet Mill	Geared	1926	American Sheet & Tin Plate Co.	Gary, Ind.	W
143	2500	160–320	600	d.c.	Continuous Sheet Mill	Geared	1926	American Sheet & Tin Plate Co.	Gary, Ind.	W
144	2500	160–320	600	d.c.	Continuous Sheet Mill	Geared	1926	American Sheet & Tin Plate Co.	Gary, Ind.	W
145	2500	160–320	600	d.c.	Continuous Sheet Mill	Geared	1926	American Sheet & Tin Plate Co.	Gary, Ind.	W
146	2500	160–320	600	d.c.	Continuous Sheet Mill	Geared	1926	American Sheet & Tin Plate Co.	Gary, Ind.	W

ROD MILL DRIVES

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1	300	300–650	250	d.c.	10″ Rod Mill	Direct	1927	Washburn Wire Co.	Phillipsdale, R. I.	W
2	300	300–650	250	d.c.	10″ Rod Mill	Direct	1927	Washburn Wire Co.	Phillipsdale, R. I.	W
3	300	375	2200	25	10″ Rod Mill	Direct	1926	U. S. Aluminum Co.	Massena, N. Y.	GE
4	300	375	2200	25	10″ Rod Mill	Direct	1926	U. S. Aluminum Co.	Massena, N. Y.	GE
5	300	575	2200	60	Rod Mill	Geared	1923	Standard Underground Cable Co.	Perth Amboy, N. J.	W
6	300	720	2200	60	Wire Rod Mill.	Geared	1917	Rome Wire Co.	Rome, N. Y.	AC
7	350	250	2200	25	10″ Rod Mill	Direct	1911	Dillworth Porter Co.	Pittsburgh, Pa.	GE
8	360	300–425	230	d.c.	8″ Rod Mill	Direct	1915	United Alloy Steel Corporation	Canton, Ohio	W
9	360	300–600	230	d.c.	Rod Mill	Direct	1922	United Alloy Steel Corporation	Canton, Ohio	W
10	360	350–500	230	d.c.	7″ Rod Mill	Direct	1915	United Alloy Steel Corporation	Canton, Ohio	W
11	450	400–650	230	d.c.	Rod Mill	Direct	1913	American Steel & Wire Co.	Worcester, Mass.	W
12	500–340	588–400	2200	60	Rod Mill	Geared	1928	Keystone Steel & Wire	Peoria, Ill.	W
13	500	350–700	600	d.c.	Wire Rod Mill	Geared	1928	John A. Roebling's Sons	Trenton, N. J.	GE
14	600	600	2200	60	10″ Rod Mill	Geared	1927	Dilworth Porter Co.	Pittsburgh, Pa.	GE
15	600	400	2300	60	10″ Rod Mill	Direct	1927	Copperweld Steel Co.	Glassport, Pa.	GE
16	600	440	2200	60	10″ Rod Mill	Direct	1917	Wickwire Spencer Steel Corp.	Palmer, Mass.	W
17	600–400	514–300	2200	60	Rod Mill	Direct	1912	Oliver Iron & Steel Co.	Pittsburgh, Pa.	GE
18	600	514	2300	60	8″ Rod Mill	Direct	1927	Copperweld Steel Co.	Glassport, Pa.	GE
19	600	705	2200	60	10″ Rod Mill	Geared	1927	Washburn Wire Co.	Phillipsdale, R. I.	AC
20	700	1200	6600	60	Wire Rod Mill		1925	Weirton Steel Co.	Weirton, W. Va.	AC
21	800	140–510	600	d.c.	10″ Rod Mill	Direct	1927	American Steel & Wire Co.	Worcester, Mass.	W
22	800	140–510	600	d.c.	10″ Rod Mill	Direct	1927	American Steel & Wire Co.	Worcester, Mass.	W
23	800	240–500	600	d.c.	Rod Mill	Direct	1928	Sheffield Steel Corporation	Kansas City, Mo.	W
24	800	257	2200	60	12″ Rod Mill	Belt	1915	Crucible Steel Co. of America	Harrison, N. J.	GE
25	800	469–750	600	d.c.	Wire Rod Mill	Geared	1928	John A. Roebling's Sons	Trenton, N. J.	GE
26	800	469–750	600	d.c.	Wire Rod Mill	Geared	1928	John A. Roebling's Sons	Trenton, N. J.	GE
27	800	535–750	600	d.c.	10″ Wire Rod Mill	Geared	1926	American Steel & Wire Co.	Worcester, Mass.	W
28	800	535–750	600	d.c.	10″ Wire Rod Mill	Geared	1926	American Steel & Wire Co.	Worcester, Mass.	W
29	800–363	706–320	600	d.c.	10″ Rod Mill	Geared	1922	Wheeling Steel Corporation	Portsmouth, Ohio	GE
30	800–363	706–320	600	d.c.	10″ Rod Mill	Geared	1922	Wheeling Steel Corporation	Portsmouth, Ohio	GE
31	800–363	706–320	600	d.c.	10″ Rod Mill	Geared	1922	Wheeling Steel Corporation	Portsmouth, Ohio	GE
32	850	250–500	250	d.c.	10″ Rod Mill	Direct	1927	Washburn Wire Co.	Phillipsdale, R. I.	W
33	975–325	650–250	600	d.c.	Rod (Roughing) Mill	Geared	1922	Atlantic Steel Co.	Altanta, Ga.	W
34	975–510	865–450	600	d.c.	Rod (Finishing) Mill	Direct & Belted	1922	Atlantic Steel Co.	Atlanta, Ga.	W
35	1000	720	6600	60	Rod Mill	Geared	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
36	1000	720	6600	60	Rod Mill	Geared	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
37	1180–955–705	560–450–336	2200	60	Rod Mill	Belt	1916	Keystone Steel & Wire Co.	Peoria, Ill.	GE
38	1200	360	2200	60	Morgan Wr. Rod Mill	Geared	1918	Interstate Iron & Steel Co.	Chicago, Ill.	AC
39	1200	520–575	230	d.c.	Rod Mill	Direct	1928	Gulf States Steel Co.	Alabama City, Ala.	W
40	1250	175–400	230	d.c.	Rod Mill	Direct	1915	United Alloy Steel Corporation	Canton, Ohio	W
41	1250–1000–650	650–500–325	2200	25	Rod Mill	Belt	1916	Wickwire Spencer Steel Co.	Buffalo, N. Y.	GE
42	1300	257	6600	60	Rod Mill	Direct	1928	Gulf States Steel Co.	Alabama City, Ala.	W
43	1300	500	6400	25	Rod (Finishing) Mill	Rope	1910	American Steel & Wire Co.	Birmingham, Ala.	W
44	1500	137–275	600	d.c.	Rod Mill	Direct	1928	Sheffield Steel Corporation	Kansas City, Mo.	W
45	1500	200–600	600	d.c.	Rod Mill	Geared	1928	Sheffield Steel Corporation	Kansas City, Mo.	W
46	1500	150	6600	25	Wire Rod Mill	Coupled	1914	Illinois Steel Co.	Joliet, Ill.	AC
47	1500	234	2200	60	10″ Rod Mill	Geared	1921	Columbia Steel Co.	Pittsburgh, Cal.	W
48	1500	270	2200	60	Lamberton Rod Mill	Geared	1915	United Alloy Steel Corporation	Canton, Ohio	W
49	1500	450	2200	60	9″ Rod Mill	Direct	1926	Washburn Wire Co.	Philipsdale, R. I.	W
50	1500	450–550	600	d.c.	Rod Mill	Direct	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
51	1500	470–510	230	d.c.	Rod Mill	Direct	1923	John A. Roebling Sons	New York, N. Y.	W
52	1600	210–420	525	d.c.	Rod Mill	Geared	1913	Steel Company of Canada	Hamilton, Ont.	W
53	1600	210–420	525	d.c.	Rod Mill	Geared	1913	Steel Company of Canada	Hamilton, Ont.	W
54	1600	500	6600	25	Rod (Finishing) Mill	Rope	1910	American Steel & Wire Co.	Birmingham, Ala.	W
55	1750	180	6600	60	Rod Mill	Direct	1928	Gulf States Steel Co.	Alabama City, Ala.	W
56	1750	514	6600	60	Rod Mill	Geared	1928	Gulf States Steel Co.	Alabama City, Ala.	W
57	1800	514	2200	60	Rod Mill	Geared	1923	Columbia Steel Co.	Pittsburgh, Cal.	GE

ROD MILL DRIVES—Continued

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd By
58	1850	575–221	600	d.c.	Rod Mill	Direct & Belted	1922	Atlantic Steel Co.	Atlanta, Ga.	W
59	2000	230–460	600	d.c.	10″ Rod Mill	Geared	1927	American Steel & Wire Co.	Worcester, Mass.	W
60	2100	720	6600	60	Rod Mill	Geared	1928	Gulf States Steel Co.	Alabama City, Ala.	W
61	2360–1880–1440	410–327–250	2200	60	Rod Mill	Geared	1916	Keystone Steel & Wire Co.	Peoria, Ill.	GE
62	2400	500	6600	25	Wire Rod Mill	Geared	1916	Illinois Steel Co.	Gary, Ind.	AC
63	2470–1725–1235	430–300–215	2200	25	Rod Mill	Geared	1916	Wickwire Spencer Steel Co.	Buffalo, N. Y.	GE
64	2500	180–450	600	d.c.	Wire Rod Mill	Geared	1928	John A. Roebling Sons	Trenton, N. J.	GE
65	2500	296	2200	60	18″ Continuous Rod Mill	Geared	1928	Sheffield Steel Corporation	Kansas City, Mo.	AC
66	2600	81 5	6600	25	Rod (Roughing) Mill	Geared	1910	American Steel & Wire Co.	Birmingham, Ala.	W
67	2600	368	6400	25	Rod Mill	Geared	1916	American Steel & Wire Co.	Cleveland, Ohio	W
68	2750	450	6600	60	Rod Mill	Geared	1928	Gulf States Steel Co.	Alabama City, Ala.	W
69	2870–1435	400–200	600	d.c.	10″ Rod Mill	Geared	1922	Wheeling Steel Corporation	Portsmouth, Ohio	GE
70	3000	150	6600	25	Wire Rod Mill	Coupled	1920	Minnesota Steel Co.	Steelton, Minn.	AC
71	3000	180–370	600	d.c.	10″ Wire Rod Mill	Geared	1926	American Steel & Wire Co.	Worcester, Mass.	W
72	3000	450	6600	60	Rod Mills	Geared	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
73	3000	450	6600	60	Rod Mills	Geared	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
74	4000	375	6600	25	10″ Cont. Wire Rod Mill	Geared	1925	Bethlehem Steel Co.	Sparrows Point, Md.	GE

PIERCING MILL DRIVES

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd By
1	300	300	2200	60	Piercing Mill	Coupled	1917	Pittsburgh Steel Products Co.	Monessen, Pa.	CW
2	300	300	2200	60	Piercing Mill	Coupled	1918	Pittsburgh Steel Products Co.	Allenport, Pa.	CW
3	300	720	4150	60	Piercing Mill	Geared	1927	Public Service Prod. Co.	Plainfield, N. J.	GE
4	400	600	440	60	Billet Piercing Machine	Geared	1915	Chase Metal Works	Waterbury, Conn.	GE
5	400	600	400	60	Piercing Mill	Geared	1915	Chase Metal Works	Waterbury, Conn.	GE
6	450	720	2200	60	Piercing Mill	Geared	1924	Standard Seamless Tube Co.	Economy, Pa.	GE
7	500	360	2200	60	Billet Piercing Mill	Geared	1922	Weldless Tube Co.	Wooster, Ohio	GE
8	500	500	2200	25	Continuous Tube Mill	Coupled	1915	Pittsburgh Steel Products Co.	Monessen, Pa.	CW
9	600	485	550	25	Piercing Mill	Geared	1915	Baltimore Tube Co.	Baltimore, Md.	W
10	650	225–400	600	d.c.	Piercing Mill	Geared	1925	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
11	650	225–400	600	d.c.	Piercing Mill	Geared	1925	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
12	650	225–400	600	d.c.	Piercing Mill	Geared	1925	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
13	700	150	2200	60	Piercing Mill	Rope	1916	Ohio Seamless Tube Co.	Shelby, Ohio	GE
14	750–750	235–325	230	d.c.	Piercing Mill	Geared	1914	Pittsburgh Seamless Tube Co.	Beaver Falls, Pa.	GE
15	750	353	2200	60	Piercing Mill	Direct	1915	National Tube Co.	Elwood City, Pa.	W
16	750	353	2200	60	Piercing Mill	Direct	1915	National Tube Co.	Elwood City, Pa.	W
17	750	353	2200	60	Piercing Mill	Direct	1915	National Tube Co.	Elwood City, Pa.	W
18	800	200–300	500	d.c.	Piercing Mill	Rope	1912	Pittsburgh Steel Products Co.	Monessen, Pa.	W
19	800	200–300	500	d.c.	Piercing Mill	Direct	1913	Pittsburgh Steel Products Co.	Monessen, Pa.	W
20	800	250	2200	60	Piercing Mill	Geared	1915	Timken Roller Bearing Co.	Canton, Ohio	W
21	1000	375	6600	25	Piercing Mill	Geared	1925	National Tube Co.	Lorain, Ohio	AC
22	1000	450	2200	60	Piercing Mill	Geared	1918	Winchester Rep. Arms Co.	New Haven, Conn.	AC
23	1200	200	2200	60	Piercing Mill	Rope	1919	Ohio Seamless Tube Co.	Shelby, Ohio	GE
24	1500	200–500	600	d.c.	Seamless Tube Mill	Direct	1928	National Tube Co.	Gary, Ind.	AC
25	1500	200–500	600	d.c.	Seamless Tube Mill	Direct	1928	National Tube Co.	Gary, Ind.	AC
26	1600	600	2200	60	Piercing Mill	Geared	1921	Standard Seamless Tube Co.	Pittsburgh, Pa.	GE
27	2000	250	6600	25	Tube and Piercing	Geared	1928	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
28	2500	247	6600	25	Piercing Mill	Geared	1923	Gary Tube Company	Gary, Ind.	W
29	2500	247	6600	25	Seamless Tube Mill	Geared	1925	Gary Tube Company	Gary, Ind.	W
30	2500	257	2200	60	Piercing Mill	Geared	1925	Globe Steel Tube Co.	Milwaukee, Wis.	AC
31	3000	40–100	600	d.c.	Piercing Mill	Direct	1925	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
32	3000	125–200	600	d.c.	Piercing Mill	Direct	1925	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
33	3000	250	6600	25	Piercing Mill	Geared	1927	National Tube Co.	Lorain, Ohio	AC
34	3000	250	6600	25	Piercing Mill	Geared	1927	National Tube Co.	Lorain, Ohio	AC
35	3000	250	6600	25	Piercing Mill	Geared	1927	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
36	3000	250	6600	25	Piercing Mill	Geared	1927	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
37	3500	600	2200	60	Piercing Mill	Geared	1925	Standard Seamless Tube Co.	Economy, Pa.	GE
38	4000	250–465	240	d.c.	Piercing Mill	Geared	1928	Timken Roller Bearing Co.	Canton, O.	GE
39	5000	240	2200	60	51″ Piercing Mill	Direct	1927	Standard Seamless Tube Co.	Economy, Pa.	GE

TUBE ROLLING MILL DRIVES

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1	300	175–300	230	d.c.	Tube Mill	Direct	1927	Babcock & Wilcox	Beaver Falls, Pa.	W
2	300	175–300	230	d.c.	Tube Mill	Direct	1927	Babcock & Wilcocx	Beaver Falls, Pa.	W
3	300	300	230	d.c.	Steel Mill	Geared	1925	National Tube Co.	Lorain, Ohio	AC
4	300	300	230	d.c.	Steel Mill	Geared	1925	National Tube Co.	Lorain, Ohio	AC
5	300	300	230	d.c.	Steel Mill	Geared	1925	National Tube Co.	Lorain, Ohio	AC
6	300	345–500	500	d.c.	Tube Rolling Mill	Geared	1912	Pittsburgh Steel Products Co.	Monessen, Pa.	W
7	300	350	2200	60	Seamless Tube Co.	Geared	1915	Timken Roller Bearing Co.	Canton, Ohio	W
8	300	350	2200	60	Tube Rolling Mill	Geared	1919	Timken Roller Bearing Co.	Canton, Ohio	W
9	300	350–450	230	d.c.	Lap Welding Mill	Coupled	1923	Gary Tube Co.	Gary, Ind.	AC
10	300	435	230	d.c.	12″ Pipe Mill	Coupled	1910	A. M. Byers Company	Pittsburgh, Pa.	CW
11	300	435	230	d.c.	12″ Pipe Mill	Coupled	1910	A. M. Byers Company	Pittsburgh, Pa.	CW
12	300	450	220	30	Lap Welding Rolls	Geared	1923	Spang Chalfant Co.	Etna, Pa.	GE
13	300	450	2200	60	Cross Rolls in Tube Mill	Geared	1924	Standard Seamless Tube Co.	Economy, Pa.	GE
14	300	450	2200	60	Cross Rolls in Tube Mill	Geared	1924	Standard Tube Co. Seamless	Economy, Pa.	GE
15	300	500	220	25	Tube Mill	Geared	1915	Republic Iron & Steel Co.	Youngstown, Ohio	GE
16	300	500	550	25	Tube Rolling Mill	Geared	1917	Baltimore Tube Co.	Baltimore, Md.	W
17	300	500	550	25	Tube Rolling Mill	Geared	1917	Baltimore Tube Co.	Baltimore, Md.	W
18	300	500	230	d.c.	Pipe Mill—Wld. Rolls	Geared	1925	Central Tube Co.	Economy, Pa.	GE
19	300	514	220	60	Tube Mill	Geared	1914	Detroit Seamless Tube Co.	Detroit, Mich.	GE
20	300	514	440	60	Tube Mill	Geared	1914	Detroit Seamless Tobe Co.	Detroit, Mich.	GE
21	300	514	220	60	Tube Mill	Geared	1918	Detroit Seamless Tube Co.	Detroit, Mich.	AC
22	300	600	2200	60	Tube Mill	Geared	1922	Weldless Tube Co.	Wooster, Ohio	GE
23	300	600	2200	60	Tube Mill	Geared	1922	Weldless Tube Co.	Wooster, Ohio	GE
24	340	85	230	d.c.	Welding Rolls	Coupled	1906	National Tube Company	McKeesport, Pa.	CW
25	350	275–550	230	d.c.	Tube Reeling Mill	Geared	1928	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
26	350	275–550	230	d.c.	Tube Reeling Mill	Geared	1928	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
27	350	350	2200	60	Seamless Tube Mill	Geared	1927	Timken Roller Bearing Co.	Canton, Ohio	W
28	350–350	360–450	230	d.c.	Welding Rolls	Direct	1920	National Tube Co.	Lorain, Ohio	GE
29	350–350	360–450	230	d.c.	Welding Rolls	Direct	1920	National Tube Co.	Lorain, Ohio	GE
30	350	435	2200	60	Pipe Welding Roll Mill	Geared	1919	Wheeling Steel Corporation	Steubenville, Ohio	W
31	350	450	2200	60	Tube Rolling Mill	Geared	1925	Pittsburgh Steel Co.	Allenport, Pa.	EM
32	350	514	2200	60	Tube Mill	Geared	1928	Globe Steel Tube Co.	Milwaukee, Wis.	AC

TUBE ROLLING MILL DRIVES—Continued

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
33	350	514	2200	60	Tube Mill	Geared	1928	Globe Steel Tube Co.	Milwaukee, Wis.	AC
34	350	720	2200	60	Tube Mill	Geared	1928	Globe Steel Tube Co.	Milwaukee, Wis.	AC
35	350	720	2200	60	Tube Mill	Geared	1928	Globe Steel Tube Co.	Milwaukee, Wis.	AC
36	400	75	230	d.c.	Welding Rolls	Coupled	1906	National Tube Company	McKeesport, Pa.	CW
37	400	300	550	25	Tube Mill	Geared	1927	Bethlehem Steel Co.	Sparrows Pt. Md.	GE
38	400	300	550	25	Tube Mill	Geared	1927	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
39	400	350	230	d.c.	Tube Reeling Drive	Geared	1927	National Tube Co.	Lorain, Ohio	AC
40	400	350	230	d.c.	Tube Reeling Drive	Geared	1927	National Tube Co.	Lorain, Ohio	AC
41	400	375	220	25	Tube Mill—Chill Rolls	Geared	1909	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
42	400	375	220	25	20" Tube Mill—Wld.Rolls	Geared	1909	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
43	400	375	220	25	Tube Mill—Wld. Rolls	Geared	1917	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
44	400	375	220	25	Tube Mill—Wld. Rolls	Geared	1922	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
45	400	375	220	25	Tube Mill—Wld. Rolls	Geared	1922	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
46	400	400	440	60	Lap Welding Rolls	Geared	1923	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	GE
47	400	400	440	60	Lap Welding Rolls	Geared	1923	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	GE
48	400	435	400	60	Pipe Mill	Geared	1918	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	W
49	400	500	6600	25	Tube Sizing Mill	Geared	1927	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
50	400	500	6600	25	Reducing Tube Mill	Geared	1928	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
51	400	500	6600	25	Reducing Tube Mill	Geared	1928	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
52	400	600	2300	60	Tube Welding Mill	Geared	1927	South Chester Tube Co.	Chester, Pa.	GE
53	400	600	440	60	Tube Mill	Geared	1920	Globe Seamless Tube Co.	Milwaukee, Wis.	AC
54	450	300	230	d.c.	10" Tube Mill	Coupled	1911	Pittsburgh Seamless Tube Co.	Beaver Falls, Pa.	CW
55	450	720	2200	60	Seamless Tube Co.	Geared	1927	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
56	500	234	2200	60	Tube Mill	Coupled	1922	Pittsburgh Steel Products Co.	Allenport, Pa.	CW
57	500	234	2200	60	Tube Mill	Coupled	1922	Pittsburgh Steel Products Co.	Allenport, Pa.	CW
58	500	250	2200	60	Tube Mill	Coupled	1918	Pittsburgh Steel Products Co.	Allenport, Pa.	CW
59	500	250	2200	60	Tube Mill	Coupled	1918	Pittsburgh Steel Products Co.	Allenport, Pa.	CW
60	500	300–450	230	d.c.	Lap Welding Mill	Coupled	1923	Gary Tube Co.	Gary, Ind.	AC
61	500	400–800	230	d.c.	Tube Reeling Mill	Geared	1927	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
62	500	400–800	230	d.c.	Tube Reeling Mill	Geared	1927	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
63	500	450	2200	60	Tube Mill	Geared	1916	Ohio Seamless Tube Co.	Shelby, Ohio	GE
64	500	450	2200	60	Tube Mill	Geared	1919	Ohio Seamless Tube Co.	Shelby, Ohio	GE
65	500	500	550	25	Tube Rolling Mill	Geared	1917	Baltimore Tube Co.	Baltimore, Md.	W
66	500	600	2200	60	Reducing Pipe Mill	Geared	1925	Ohio Seamless Tube Co.	Shelby, Ohio	GE
67	500	600	4600	60	Reducing Mill	Geared	1926	Detroit Seamless Steel Tube Co.	Detroit, Mich.	AC
68	600	300	2200	60	Tube Mill	Coupled	1917	Pittsburgh Steel Products Co.	Monessen, Pa.	CW
60	600	300	2200	60	Tube Mill	Coupled	1918	Pittsburgh Steel Products Co.	Allenport, Pa.	CW
70	600	360	2200	60	Tube Mill	Geared	1914	Standard Seamless Tube Co.	Economy, Pa.	GE
71	700	300–400	230	d.c.	Lap Welding Mill	Coupled	1923	Gary Tube Co.	Gary, Ind.	AC
72	750	295	6600	25	Seamless Mill	Geared	1923	Gary Tube Co.	Gary, Ind.	W
73	750	353	2200	60	Tube Rolling Mill	Direct	1915	National Tube Co.	Ellwood City, Pa.	W
74	750	353	2200	60	Tube Rolling Mill	Direct	1915	National Tube Co.	Ellwood City, Pa.	W
75	750	353	2200	60	Tube Rolling Mill	Direct	1915	National Tube Co.	Ellwood City, Pa.	W
76	800	107	6600	25	Tube Rolling Mill	Coupled	1925	National Tube Co.	Lorain, Ohio	AC
77	800	109	2200	60	2—21" Rolls	Coupled	1924	Globe Steel Tube Co.	Milwaukee, Wis.	AC
78	800	225	2200	60	Roughing Mill Tube	Geared	1916	Standard Seamless Tube Co.	Economy, Pa.	GE
79	1000	240	220	60	Tube Mill	Geared	1919	Globe Seamless Tube Co.	Milwaukee, Wis.	AC
80	1000	240	2200	60	Tube Mill	Rope & Direct	1917	Pittsburgh Seamless Tube Co.	Beaver Falls, Pa.	CW
81	1000	300–400	230	d.c.	Lap Welding Mill	Coupled	1923	Gary Tube Co.	Gary, Ind.	AC
82	1000	375	6600	25	Tube Mill	Rope Geared	1928	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
83	1200	112.5	2200	60	Tube Mill	Geared	1928	Globe Steel Tube Co.	Milwaukee, Wis.	AC
84	1200	257	4600	60	Tube Mill	Direct & Coupled	1918	Detroit Seamless Tube Co.	Detroit, Mich.	GE
85	1200	294	2200	60	Tube Rolling Mill	Geared	1915	National Tube Co.	Ellwood City, Pa.	W
86	1500	62–½	6600	25	Tube Rolling Mill	Coupled	1926	Gary Tube Co.	Gary, Indiana	AC
87	1500	62½	6600	25	Tube Mill	Direct	1927	National Tube Co.	Lorain, Ohio	AC
88	1500	375	6600	25	Tube Rolling Mill	Geared	1927	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
89	1600	600	2200	60	Tube Rolling Mill	Geared	1925	Standard Seamless Tube Co.	Economy, Pa.	GE
90	1800	150	6600	60	Tube Mill	Direct	1928	Pittsburgh Steel Co.	Allenport, Pa.	W
91	1800	250	2200	60	Tube Rolling Mill	Direct	1915	National Tube Co.	Ellwood City, Pa.	W
92	1800–1350	300	2200	60	Tube Rolling Mill	Geared	1927	National Tube Co.	Elwood City, Pa.	GE

STRIP AND HOOP MILL DRIVES

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1	300	250–750	250	d.c.	12" Hoop Mill	Geared	1928	Carnegie Steel Co.	Youngstown, O.	W
2	300-225-165	335-225-165	6600	25	12" Hot Strip Mill	Geared	1920	Illinois Steel Co.	Gary, Ind.	GE
3	300	360	2200	60	10" Strip Mill	Coupled	1923	Pittsburgh Steel Company	Glassport, Pa.	CW
4	300	600	2200	60	10" Hot Strip Mill	Direct	1919	Superior Steel Co.	Carnegie, Pa.	GE
5	350	242	2200	25	Cold Strip Mill	Geared	1922	Otis Steel Co.	Cleveland, Ohio	W
6	350	345	440	60	21" Plate (Cold Roll.) Mill	Geared	1910	Oliver Iron & Steel Co.	Wilson Station, Pa.	W
7	350	450–600	230	d.c.	Band Mill	Direct	1926	Sharon Steel Hoop Co.	Sharon, Pa.	CW
8	350	490	6400	25	24" Flat (Edging) Mill	Geared	1916	American Steel & Wire Co.	Cleveland, Ohio	W
9	400–400	275–500	550	d.c.	12" Hot Strip Mill	Direct	1916	American Steel & Wire Co.	Cleveland, Ohio	GE
10	400	360	2200	60	8" Strip Mill	Coupled	1923	Pittsburgh Steel Company	Glassport, Pa.	CW
11	400	420–1050	250	d.c.	12" Hoop Mill	Geared	1928	Carnegie Steel Co.	Youngstown, O.	W
12	450	440–350	2200	60	Cont. Hoop (Fin.) Mill	Direct	1920	Connors Steel Co.	Birmingham, Ala.	W
13	450	450–600	230	d.c.	12" Cold Strip (2 Tandem Stds. Roughing) Mill	Geared	1915	Superior Steel Co..	Carnegie, Pa.	W
14	450	450–600	230	d.c.	12" Cold Strip (2 Tandem Stds. Finishing) Mill	Geared	1915	Superior Steel Co.	Carnegie, Pa.	W
15	450	700–595	2200	60	Cont. Hoop (Fin.) Mill	Direct	1920	Connors Steel Co.	Birmingham, Ala.	W
16	450	730	6600	25	Hoop Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	W
17	450	730	6600	25	Hoop Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	W
18	500	210–525	600	d.c.	16" Strip Mill	Geared	1928	Weirton Steel Co.	Weirton, W. Va.	GE
19	500-500	250–325	230	d.c.	8" Hoop Mill	Direct	1909	Atlantic Steel Co.	Atlanta, Ga.	GE
20	500	250–500	230	d.c.	9" Hoop (Finishing) Mill	Direct	1914	Sharon Steel Hoop Co.	Sharon, Pa.	W
21	500	250–380	600	d.c.	10" Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, O.	W
22	500	340–543	600	d.c.	10" Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, O.	W
23	500-500	400–600	230	d.c.	Hoop Mill	Geared	1920	Atlantic Steel Co.	Atlanta, Ga.	GE
24	500	400–600	600	d.c.	8" Strip Mill	Direct	1928	Superior Steel Corporation	Carnegie, Pa.	W
25	500	435–722	600	d.c.	10" Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, O.	W
26	500	450	440	60	Hoop Mill	Geared	1912	Carnegie Steel Company	Pittsburgh, Pa.	CW
27	500	543–892	600	d.c.	10" Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, O.	W
28	500	667–1000	600	d.c.	10" Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, O.	W
29	550	320–206	2200	60	10" Hoop Mill	Direct	1917	Atlantic Steel Co.	Atlanta, Ga.	W
30	600–600	150–250	575	d.c.	6" Hot Strip Mill	Direct	1913	American Steel & Wire Co.	Cleveland, Ohio	GE
31	600	185–470	600	d.c.	10" Strip Mill	Direct	1926	LacLede Steel Co.	Alton, Ill.	W

STRIP AND HOOP MILL DRIVES—Continued

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
32	600-600	225-425	550	d.c.	12″ Hot Strip Mill	Direct	1916	American Steel & Wire Co.	Cleveland, Ohio	GE
33	600	270-635	600	d.c.	10″ Strip Mill	Direct	1926	LacLede Steel Co.	Alton, Ill.	W
34	600	390	440	60	Cold Strip Mill	Geared	1917	Stanley Works	New Haven, Conn.	W
35	600	400-900	250	d.c.	12″ Hoop Mill	Geared	1928	Carnegie Steel Co.	Youngstown, O.	W
36	600	400-900	250	d.c.	12″ Hoop Mill	Geared	1928	Carnegie Steel Co.	Youngstown, O.	W
37	600	400-900	250	d.c.	12″ Hoop Mill	Geared	1928	Carnegie Steel Co.	Youngstown, O.	W
38	600-600	720-360	6600	60	Hot Strip Mill	Geared	1916	Weirton Steel Co.	Weirton, W. Va.	AC
39	700	490	6600	25	Hoop Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	W
40	700	490	6600	25	Hoop Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	W
41	700	875	2200	60	Cont. Hoop (Rough.) Mill	Geared	1920	Connors Steel Co.	Birmingham, Ala.	W
42	700	875	2200	60	Cont. Hoop (Inter.) Mill	Geared	1920	Connors Steel Co.	Birmingham, Ala.	W
43	720	395-825	600	d.c.	10″ Strip Mill	Direct	1926	LacLede Steel Co.	Alton, Ill.	W
44	720	480-1000	600	d.c	10″ Strip Mill	Direct	1926	LacLede Steel Co.	Alton, Ill.	W
45	750	200-600	600	d.c.	10″ Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, O.	W
46	750	225-500	250	d.c.	12″ Hoop Mill	Direct	1928	Carnegie Steel Co.	Youngstown, O.	W
47	750	225-500	250	d.c.	12″ Hoop Mill	Direct	1928	Carnegie Steel Co.	Youngstown, O.	W
48	750	257	2200	60	10″ Strip Mill	Coupled	1923	Pittsburgh Steel Company	Glassport, Pa.	CW
49	750-625-460	360-300-220	6600	25	12″ Hot Strip Mill	Direct	1920	Illinois Steel Co.	Gary, Ind.	GE
50	750-750	360-860	600	d.c.	14″ Cont. Mill	Geared	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
51	750-600-400	473-375-278	6600	25	12″ Hot Strip Mill	Direct	1920	Illinois Steel Co.	Gary, Ind.	GE
52	770-700-630	540-490-440	6600	25	Hoop Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	W
53	800-800	200-400	600	d.c.	14″ Hot Strip Mill	Direct	1920	Trumbull Steel Co.	Warren, Ohio	GE
54	800-800	214-167	6600	25	16″ Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
55	800-800	231-462	600	d.c.	14″ Hot Strip Mill	Direct	1920	Trumbull Steel Co.	Warren, Ohio	GE
56	800	250-500	230	d.c.	14″ and 9″ Hoop Mill	Direct	1914	Sharon Steel Hoop Co.	Sharon, Pa.	W
57	800	250-750	600	d.c.	14″ Hot Strip Mill	Direct	1927	Trumbull Steel Co.	Warren, Ohio	GE
58	800-800	256-512	600	d.c.	14″ Hot Strip Mill	Direct	1920	Trumbull Steel Co.	Warren, Ohio	GE
59	800	257	2200	60	Hot Strip Mill	Geared	1926	Standard Seamless Tube Co.	Economy, Pa.	GE
60	800-800	275-550	600	d.c.	14″ Hot Strip Mill	Direct	1920	Trumbull Steel Co.	Warren, Ohio	GE
61	800-800	315-210	575	d.c.	6″ Hot Strip Mill	Direct	1907	American Steel & Wire Co.	Cleveland, Ohio	GE
62	800	350-600	230	d.c.	Band Mill	Direct	1926	Sharon Steel Hoop Co.	Sharon, Pa.	CW
63	800	350-600	230	d.c.	Band Mill	Direct	1926	Sharon Steel Hoop Co.	Sharon, Pa.	CW
64	800-800	390-260	575	d.c.	6″ Hot Strip Mill	Direct	1907	American Steel & Wire Co.	Cleveland, Ohio	GE
65	800	425-875	250	d.c.	12″ Hoop Mill	Direct	1928	Carnegie Steel Co.	Youngstown, O.	W
66	800	425-875	250	d.c.	12″ Hoop Mill	Direct	1928	Carnegie Steel Co.	Youngstown, O.	W
67	800	450	2200	60	8″ Strip Mill	Direct	1928	Superior Steel Corporation	Carnegie, Pa.	W
68	800	435	2200	60	No. 2 Hoop Mill	Geared	1925	Connors Steel Co.	Birmingham, Ala.	W
69	800	505	2200	60	9″ Hot Strip Mill	Direct	1926	West Leechburg Steel Co.	West Leechburg, Pa.	W
70	800	585-292	6600	60	16″ Hoop and Band Mill	Geared	1915	Weirton Steel Co.	Weirton, W. Va.	W
71	800-800-800	720-600-480	2200	60	12″ Hot Strip Mill	Geared	1929	Canadian Electric Steel Co.	Montreal, Canada	GE
72	900	150-300	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corporation	Steubenville, O.	GE
73	900-710-620	325-257-182	2300	60	10″ Hoop Mill	Geared	1918	Acme Steel Goods Co.	Riverdale, Ill.	GE
74	1000	50-100	600	d.c.	24″ Flat (Rough.) Mill	Direct	1916	American Steel & Wire Co.	Cleveland, Ohio	W
75	1000	214-150	6400	25	24″ Flat (Finishing) Mill	Direct	1916	American Steel & Wire Co.	Cleveland, Ohio	W
76	1000	277	2200	60	Strip Mill	Geared	1919	American Tube & Stamping Co.	Bridgeport, Conn.	GE
77	1000	435	2200	60	Hot Strip Mill	Geared	1924	American Tube & Stamping Co.	Bridgeport, Conn.	W
78	1000	435	2200	60	Hot Strip Mill	Geared	1924	American Tube & Stamping Co.	Bridgeport, Conn.	W
79	1000	705	2200	60	16″ Strip Mill	Geared	1920	Central Steel Co.	Massillon, Ohio	W
80	1125-900-675	312-250-187	6600	25	12″ Strip Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	GE
81	1200	125-275	600	d.c.	10″ Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, O.	W
82	1200	200-400	230	d.c.	14″ Band Hoop Mill	Direct	1926	Sharon Steel Hoop Co.	Sharon, Pa.	W
83	1200	200-400	230	d.c.	14″ Band Hoop Mill	Direct	1926	Sharon Steel Hoop Co.	Sharon, Pa.	W
84	1200	250-500	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corporation	Steubenville, O.	GE
85	1200	250-500	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corporation	Steubenville, O.	GE
86	1200-1200-1200	450-360-270	2300	60	9″ Hot Strip Mill	Geared	1916	Trumbull Steel Co.	Warren, Ohio	GE
87	1200-1200-1200	450-360-270	2300	60	9″ Hot Strip Mill	Geared	1916	Trumbull Steel Co.	Warren, Ohio	GE
88	1200-1200-1200	450-360-270	2300	60	9″ Hot Strip Mill	Direct	1916	Trumbull Steel Co.	Warren, Ohio	GE
89	1200-1000-800	450-375-300	6600	25	8″ Hoop Mill, No. 8	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
90	1200-1000-800	450-375-300	6600	25	8″ Hoop Mill, No. 9	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
91	1200-1000-800	450-375-300	6600	25	18″ Band Mill, No. 13	Geared	1919	Carnegie Steel Co.	Youngstown, Ohio	GE
92	1200	505-303	6600	60	16″ Band Mill	Geared	1919	Weirton Steel Co.	Weirton, W. Va.	W
93	1200	590-450	2200	60	Duo and Bull Head Mill	Geared	1916	Central Steel Co.	Massillon, Ohio	W
94	1200	590	2200	60	22″ Strip Mill	Geared	1918	Harrisburg Pipe & Pipe Bending Co.	Harrisburg, Pa.	W
95	1250	103-253	600	d.c.	Strip Mill	Direct	1928	Sharon Steel Hoop Co.	Sharon, Pa.	GE
96	1250	137-326	600	d.c.	Strip Mill	Direct	1928	Sharon Steel Hoop Co.	Sharon, Pa.	GE
97	1250-1250	175-350	600	d.c.	14″ Hot Strip Mill	Geared	1920	Trumbull Steel Co.	Warren, Ohio	GE
98	1250-1250	175-350	600	d.c.	14″ Hot Strip Mill	Geared	1920	Trumbull Steel Co.	Warren, Ohio	GE
99	1250	175-413	600	d.c.	Strip Mill	Direct	1928	Sharon Steel Hoop Co.	Sharon, Pa.	GE
100	1250	200-500	600	d.c.	Strip Mill	Direct	1928	Sharon Steel Hoop Co.	Sharon, Pa.	GE
101	1250	250-580	600	d.c.	Strip Mill	Direct	1928	Sharon Steel Hoop Co.	Sharon, Pa.	GE
102	1250	312-625	600	d.c.	Strip Mill	Direct	1928	Sharon Steel Hoop Co.	Sharon, Pa.	GE
103	1400	450-550	500	d.c.	12″ Spring Mill	Coupled	1926	Ford Motor Co., Fordson Plant	Detroit, Mich.	AC
104	1500	125-250	230	d.c.	14″ Band Mill	Direct	1914	Sharon Steel Hoop Co.	Sharon, Pa.	W
105	1500	125-250	240	d.c.	Strip Mill	Geared	1922	West Leechburg Steel Co.	Leechburg, Pa.	W
106	1500	125-250	240	d.c.	Strip Mill	Geared	1922	West Leechburg Steel Co.	Leechburg, Pa.	W
107	1500	150	6600	60	Wide Strip Mill	Geared	1928	Wheeling Steel Corporation	Steubenville, O.	GE
108	1500	164	2200	60	Hot Strip Mill	Direct	1928	Danville Structural Steel Co.	Danville, Pa.	EM
109	1500	164	2200	60	Hot Strip Mill	Direct	1928	Danville Structural Steel Co.	Danville, Pa.	EM
110	1500	198-100	600	d.c.	10″ Strip Mill	Rope & Direct	1926	LacLede Steel Co.	Alton, Ill.	W
111	1500	200	6600	60	Strip Sheet Mill	Geared	1926	Weirton Steel Co.	Weirton, W. Va.	GE
112	1500	200-400	600	d.c.	20″-16″ Hot Strip Mill	Geared	1925	Acme Steel Goods Co.	Riverdale, Ill.	W
113	1500	220-440	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corporation	Steubenville, O.	GE
114	1500	257	2200	25	10″ Hot Strip Mill	Direct	1919	Superior Steel Co.	Carnegie, Pa.	GE
115	1500-1500	280-420	600	d.c.	20″ Hot Strip Mill	Direct	1922	Otis Steel Co.	Cleveland, Ohio	GE
116	1500-1500	280-420	600	d.c.	20″ Hot Strip Mill	Direct	1922	Otis Steel Co.	Cleveland, Ohio	GE
117	1500-1500	280-420	600	d.c.	20″ Hot Strip Mill	Direct	1922	Otis Steel Co.	Cleveland, Ohio	GE
118	1500	325-450	600	d.c.	10″ Strip Mill	Direct	1928	Superior Steel Corporation	Carnegie, Pa.	W
119	1500	360	2200	60	10″ Hot Strip Mill	Direct	1919	Superior Steel Co.	Carnegie, Pa.	GE
120	1500	450	6600	60	Strip Sheet Mill	Geared	1926	Weirton Steel Co.	Weirton, W. Va.	GE
121	1500	450	6600	60	Strip Sheet Mill	Geared	1926	Weirton Steel Co.	Weirton, W. Va.	GE
122	1500-1500-1200	450-360-270	2300	60	16″ Strip Mill	Geared	1916	Trumbull Steel Co.	Warren, Ohio	GE
123	1500-1200-900	468-375-281	6600	25	12″ Strip Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	GE
124	1500	505	6600	60	16″ Hoop and Band Mill	Geared	1915	Weirton Steel Co.	Weirton, W. Va.	W
125	1500	514	6600	60	Hot Strip Mill	Geared	1917	Weirton Steel Co.	Weirton, W. Va.	AC
126	1500-1500	514-237	6600	60	Hot Strip Mill	Geared	1917	Weirton Steel Co.	Weirton, W. Va.	AC
127	1500	514	6600	60	Hot Strip Mill	Geared	1924	Weirton Steel Co.	Weirton, W. Va.	AC
128	1500-1500	514-237	6600	60	Hot Strip Mill	Geared	1917	Weirton Steel Co.	Weirton, W. Va.	AC
129	1500	705	2200	60	Strip Mill	Geared	1922	West Leechburg Steel Co.	Leechburg, Pa.	W
130	1500	705	2200	60	Strip Mill	Geared	1922	West Leechburg Steel Co.	Leechburg, Pa.	W
131	1500	705	2200	60	20″-16″ Hot Strip Mill	Geared	1925	Acme Steel Goods Co.	Riverdale, Ill.	W
132	1600	440-500-540	6600	25	Hoop Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	W
133	1600	440-500-540	6600	25	Hoop Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	W
134	1600	490	6600	25	Hoop Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	W
135	1600	705	2200	60	9″ Hot Strip Mill	Geared	1926	West Leechburg Steel Co.	West Leechburg, Pa.	W
136	1650-1205	235-187.5	6600	25	20″ Hot Strip Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
137	1700-1700	90-140	600	d.c.	14″ Continuous Mill	Direct	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
138	1700-1700	90-205	600	d.c.	14″ Continuous Mill	Direct	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
139	1750	100-200	500	d.c.	12″ Spring Strip Mill	Coupled	1926	Ford Motor Co., Fordson Plant	Detroit, Mich.	AC

STRIP AND HOOP MILL DRIVES—Continued

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
140	1800-1800	115-230	600	d.c.	20″ Hot Strip Mill	Direct	1922	Otis Steel Co.	Cleveland, Ohio	GE
141	1800-1800	115-230	600	d.c.	20″ Hot Strip Mill	Direct	1922	Otis Steel Co.	Cleveland, Ohio	GE
142	1800-1800	115-230	600	d.c.	20″ Hot Strip Mill	Direct	1922	Otis Steel Co.	Cleveland, Ohio	GE
143	1800	125-250	600	d.c.	20″-16″ Hot Strip Mill	Direct	1925	Acme Steel Goods Co.	Riverdale, Ill.	W
144	1800	125-250	600	d.c.	20″-16″ Hot Strip Mill	Direct	1925	Acme Steel Goods Co.	Riverdale, Ill.	W
145	1800	165-350	240	d.c.	Strip Mill	Direct	1922	West Leechburg Steel Co.	Leechburg, Pa.	W
146	1800	165-350	240	d.c.	Strip Mill	Direct	1922	West Leechburg Steel Co.	Leechburg, Pa.	W
147	1800	185-370	600	d.c.	20″-16″ Hot Strip Mill	Geared	1925	Acme Steel Goods Co.	Riverdale, Ill.	W
148	1800	185-370	600	d.c.	20″-16″ Hot Strip Mill	Direct	1925	Acme Steel Goods Co.	Riverdale, Ill.	W
149	1800	185-370	600	d.c.	20″-16″ Hot Strip Mill	Direct	1925	Acme Steel Goods Co.	Riverdale, Ill.	W
150	1800	214	2200	25	6″ Hot Strip Mill	Rope	1907	American Steel & Wire Co.	Cleveland, Ohio	GE
151	1800-1500-1200	240-200-160	2300	60	10″ Hoop Mill	Belt	1918	Acme Steel Goods Co.	Riverdale, Ill.	GE
152	1800-1500-1200	450-375-300	6600	25	10″ Hoop Mill, No. 11	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
153	1800	500	6600	25	20″ Hot Strip Mill	Geared	1922	Otis Steel Co	Cleveland, Ohio	GE
154	2000	180	2200	60	14″ Strip Mill	Direct	1928	Superior Steel Corporation	Carnegie, Pa.	W
155	2000	200-400	600	d.c.	Hot Strip Mill	Geared	1926	Columbia Steel Co.	Butler, Pa.	GE
156	2000	200-400	600	d.c.	Hot Strip Mill	Geared	1926	Columbia Steel Co.	Butler, Pa.	GE
157	2000	200-400	600	d.c.	Hot Strip Mill	Geared	1926	Columbia Steel Co.	Butler, Pa.	GE
158	2000	200-400	600	d.c.	Hot Strip Mill	Geared	1926	Columbia Steel Co.	Butler, Pa.	GE
159	2000	200-400	600	d.c.	Strip Sheet Mill	Direct	1926	Weirton Steel Co.	Weirton, W. Va.	GE
160	2000	200-400	600	d.c.	Strip Sheet Mill	Direct	1926	Weirton Steel Co.	Weirton, W. Va.	GE
161	2000	200-350	600	d.c.	14″ Strip Mill	Direct	1928	Superior Steel Corporation	Carnegie, Pa.	W
162	2000-1700	210-680	600	d.c.	14″ Continuous Mill	Direct	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
163	2000-2000-1600	450-360-270	2200	60	16″ Hot Strip Mill	Geared	1920	Trumbull Steel Co.	Warren, Ohio	GE
164	2000-2000-1600	450-360-270	2200	60	16″ Hot Strip Mill	Geared	1920	Trumbull Steel Co.	Warren, Ohio	GE
165	2000-2000-1600	450-360-270	2200	60	16″ Hot Strip Mill	Geared	1920	Trumbull Steel Co.	Warren, Ohio	GE
166	2000-1600-1200	625-500-375	6600	25	12″ Strip Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	GE
167	2000-1600-1200	625-500-375	6600	25	14″ Bar Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	GE
168	2100-2100	150-310	600	d.c.	14″ Cont. Strip Mill	Direct	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
169	2100-1600	150-460	600	d.c.	14″ Cont. Strip Mill	Direct	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
170	2200-2000-1800	275-250-225	6600	25	18″ Band Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	GE
171	2300	200-400	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corporation	Steubenville, O.	GE
172	2500	187.5	6600	25	18″ Band Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	GE
173	2500	187.5	6600	25	18″ Band Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	GE
174	2500	200-400	600	d.c.	Strip Sheet Mill	Direct	1926	Weirton Steel Co.	Weirton, W. Va.	GE
175	2500	200-400	600	d.c.	Strip Sheet Mill	Direct	1926	Weirton Steel Co.	Weirton, W. Va.	GE
176	2500	200-400	600	d.c.	Strip Sheet Mill	Direct	1926	Weirton Steel Co.	Weirton, W. Va.	GE
177	2500	352-176	6600	60	16″ Hoop and Band Mill	Geared	1915	Weirton Steel Co.	Weirton, W. Va.	W
178	2750-2240-1750	262-214-167	6600	25	12″ Hot Strip Mill	Direct	1920	Illinois Steel Co.	Gary, Ind.	GE
179	3000	125	6400	25	20″ Flat Mill	Coupled	1916	American Steel & Wire Co.	Cleveland, Ohio	AC
180	3000	180-360	600	d.c.	Hot Strip Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
181	3000	180-360	600	d.c.	Hot Strip Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
182	3000	180-360	600	d.c.	Hot Strip Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
183	3000	180-360	600	d.c.	Hot Strip Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
184	3000-3000	200-360	600	d.c.	14″ Continuous Mill	Geared	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
185	3000	200-400	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corporation	Steubenville, O.	GE
186	3000	200-400	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corporation	Steubenville, O.	GE
187	3000	200-400	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corporation	Steubenville, O.	GE
188	3000	200-400	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corporation	Steubenville, O.	GE
189	3000-2500-2000	300-250-200	6600	25	18″ Band Mill, No. 13	Direct	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
190	3000-2500-2000	300-250-200	6600	25	12″ Hoop Mill, No. 13	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
191	4500	150-450	600	d.c.	Strip Mill	Geared	1928	Sharon Steel Hoop Co.	Sharon, Pa.	GE
192	5000	70-150	900	d.c.	27″ Rev. Hot Strip Mill	Direct	1926	Columbia Steel Co.	Butler, Pa.	GE
193	5000-4000-3000	450-360-270	2200	60	16″ Hot Strip Mill	Geared	1925	Trumbull Steel Co.	Warren, Ohio	GE
194	5500-4400-3400	170-136-105	6600	25	20″ Hot Strip Mill	Direct	1920	Illinois Steel Co.	Gary, Ind.	GE

MERCHANT MILL DRIVES

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1	300	175-225	600	d.c.	10″ Merchant Mill	Direct	1926	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
2	300-300	187.5-112.5	2200	25	12″ Merchant Mill	Direct	1914	Bethlehem Stee Co.	Lebanon, Pa.	GE
3	300-300	187.5-112.5	2200	25	12″ Merchant Mill	Direct	1914	Bethlehem Steel Co.	Lebanon, Pa.	GE
4	300	225-450	230	d.c.	Merchant Mill	Direct	1928	Barton Spider Web Co.	Chicago, Ill.	W
5	300	250-750	250	d.c.	10″ Merchant Mill	Geared	1928	Tennessee Coal Iron R. R.	Fairfield, Ala.	CW
6	300	257	2200	60	Merchant Mill		1917	Tennessee Coal, Iron & R. R. Co.	Bessemer, Ala.	CW
7	300	267-800	230	d.c.	Hot Merchant Mill	Geared	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
8	300	267-800	230	d.c.	Hot Merchant Mill	Geared	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
9	300	267-800	230	d.c.	Hot Merchant Mill	Geared	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
10	300-300	300-180	2200	25	10″ Merchant Mill	Direct	1914	Bethlehem Steel Co.	Lebanon, Pa.	GE
11	300	300	2200	60	Merchant Mill		1917	Tennessee Coal, Iron & R. R. Co.	Bessemer, Ala.	CW
12	300-300	315-630	230	d.c.	8″ Merchant Mlli	Direct	1919	Donner Steel Co.	Buffalo, N. Y.	GE
13	300	350-500	230	d.c.	Merchant Mill	Coupled	1915	Buffalo Bolt Company	N. Tonawanda, N. Y.	CW
14	300	365	2200	25	8″ Merchant Mill	Direct	1909	Bethlehem Steel Co.	Johnstown, Pa.	W
15	300	440	2200	60	Merch. (Roughing) Mill	Coupled	1923	Ft. Wayne Rolling Mill Co.	Ft. Wayne, Ind.	AC
16	300	450	2200	60	8″ Merchant Mill		1917	Llewellyn Iron Works	Los Angeles, Cal.	GE
17	300-300	500-300	2200	25	9″ Merchant Mill	Direct	1914	Bethlehem Steel Co.	Lebanon, Pa.	GE
18	300-300	500-300	2200	25	8″ Merchant Mill	Direct	1914	Bethlehem Steel Co.	Lebanon, Pa.	GE
19	300	500	2080	25	9″ Merchant Mill	Geared	1916	Halcomb Steel Co.	Syracuse, N. Y.	GE
20	300-150	590-292	2200	60	9″ Merchant (Fin.) Mill	Geared	1920	Cleveland Hardware Co.	Cleveland, Ohio	W
21	300	600	2200	60	Merchant Mill	Geared	1916	Tennessee Coal, Iron & R. R. Co.	Bessemer, Ala.	GE
22	300	720	440	60	14″ Merchant Mill	Geared	1913	Bourne Fuller Co.	Cleveland, Ohio	GE
23	300	720	440	60	12″ Merchant Mill	Geared	1919	The Stanley Works	New Britain, Conn.	GE
24	300	750	3000	50	Merchant Mill	Geared	1923	Cons. Rolling Mills Co.	Mexico City, Mex.	GE
25	300-200	920-360	220	d.c.	Merchant Mill	Direct	1919	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
26	350-350	150-100	6600	25	12″ Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
27	350	200-300	250	d.c.	9″ Merchant Mill	Direct	1919	National Farming Machinery, Ltd.	Montmagny, P. Q.	W
28	350-350	240-480	240	d.c.	10″ Merchant Mill	Direct	1923	LaClede Steel Co.	St. Louis, Mo.	GE
29	350	250-325	230	d.c.	9″ Merchant Mill	Direct	1921	Wayne Steel Co.	Erie, Pa.	W
30	350-235	300-200	6600	25	Merchant Mill	Geared	1920	Illinois Steel Co.	Gary, Ind.	GE
31	350-350	360-240	240	d.c.	10″ Merchant Mill	Direct	1911	LaClede Steel Co.	St. Louis, Mo.	GE
32	350-350	375-214	6600	25	9″ Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
33	350	400-800	230	d.c.	8″ Merchant Mill	Direct	1928	Laclede Steel Co.	Alton, Ill.	GE
34	350	480	2200	25	12″ Roughing Stand Mill	Geared	1923	Halcomb Steel Co.	Syracuse, N. Y.	W
35	350	420	2200	50	Merchant Mill	Geared	1919	Southern California Iron & SteelCo.	Los Angeles, Cal.	W
36	350	524-850	230	d.c.	18″ Blading Mill	Geared	1924	W. E. & M. Co.	South Phila. Works	W
37	350	580	2200	60	Merchant Mill	Geared	1916	Copper Clad Steel Co.	Pittsburgh, Pa.	W
38	350	590	2200	60	12″ Merchant Mill	Geared	1918	Indianapolis & Eastern TractionCo.	Indianapolis, Ind.	W
39	350	700	2200	60	Merchant Mill	Geared	1918	Kilby Car & Foundry Co.	Anniston, Ala	W
40	400	180-540	600	d.c.	Merchant Mill	Direct	1928	American Steel & Wire Co.	Cleveland, O.	W

MERCHANT MILL DRIVES—Continued

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
41	400	200–300	230	d.c.	9″ Merchant Mill	Direct	1914	United Alloy Steel Corp.	Canton, Ohio	W
42	400	210–350	230	d.c.	Merchant Mill		1915	Buffalo Bolt Company	N. Tonawanda, N. Y.	CW
43	400	223–669	600	d.c.	Merchant Mill	Direct	1928	American Steel & Wire Co.	Cleveland, O.	W
44	400	240–721	600	d.c.	9″ Merchant Mill	Geared	1926	Illinois Steel Co.	Gary, Ind.	GE
45	400	240–721	600	d.c.	9″ Merchant Mill	Geared	1926	Illinois Steel Co.	Gary, Ind.	GE
46	400	240–721	600	d.c.	9″ Merchant Mill	Geared	1926	Illinois Steel Co.	Gary, Ind.	GE
47	400	240–721	600	d.c.	9″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
48	400–400	250–500	230	d.c.	10″ Merchant Mill	Direct	1920	Timken Roller Bearing Co.	Canton, Ohio	GE
49	400	250–750	600	d.c.	Merchant Mill	Direct	1928	American Steel & Wire Co.	Cleveland, O.	W
50	400	295–885	600	d.c.	Merchant Mill	Direct	1928	American Steel & Wire Co.	Cleveland, O.	W
51	400	300	2200	25	Merchant Mill	Rope	1909	American Steel & Wire Co.	Cleveland, Ohio	GE
52	400	300	2200	25	Merchant Mill	Rope	1909	American Steel & Wire Co.	Cleveland, Ohio	GE
53	400	300	2500	25	Merchant Mill	Rope	1909	American Steel & Wire Co.	Cleveland, Ohio	GE
54	400	300	2200	25	Merchant Mill	Rope	1909	American Steel & Wire Co.	Cleveland, Ohio	GE
55	400–500	300–600	600	d.c.	9″ Finishing Mill	Geared	1921	Driver Harris Co.	Harrison, N. J.	W
56	400	385	550	40	22″ Puddle Mill	Geared	1917	Cohoes Rolling Mill Co.	Cohoes, N. Y.	W
57	400	400–450	220	d.c.	8″ Merchant Mill	Direct	1911	Illinois Steel Co.	Milwaukee, Wis.	W
58	400	400	2200	60	9″ Merchant Mill	Belted	1928	Carpenter Steel Co.	Reading, Pa.	GE
59	400	420–1050	250	d.c.	10″ Merchant Mill	Geared	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
60	400	440	440	60	8″ Mill	Chain	1928	Phoenix Horseshoe Co.	Joliet, Ill.	W
61	400	440	440	60	8″ Mill	Chain	1928	Phoenix Horseshoe Co.	Joliet, Ill.	W
62	400	440	440	60	8″ Mill	Chain	1928	Phoenix Horseshoe Co.	Joliet, Ill.	W
63	400	485	440	25	9″ Merchant Mill	Geared	1915	Hess Steel Corporation	Baltimore, Md.	W
64	400	480	440	25	Merchant Mill	Geared	1927	Bethlehem Steel Co.	Lackawanna, N. Y.	CW
65	400	585	4000	60	14″ Merchant Mill	Geared	1922	Calumet Steel Co.	Chicago, Ill.	W
66	400	600	440	60	12″ Merchant Mill	Geared	1919	The Stanley Works	New Britain, Conn.	GE
67	400	700	440	60	Merchant Mill	Geared	1928	Vulcan Crucible Steel Co.	Aliquippa, Pa.	W
68	450	211–422	600	d.c.	9″ Merchant Mill	Geared	1926	Illinois Steel Co.	Gary, Ind.	GE
69	450	211–422	600	d.c.	9″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
70	450	354–230	2200	60	8″ Merchant Mill	Direct	1919	Bourne-Fuller Co.	Cleveland, Ohio	W
71	450	440	2200	60	Merchant Mill	Geared	1920	Kansas City Bolt & Nut Co.	Kansas City, Mo.	W
72	450	450	2080	60	18″ Merchant Mill	Geared	1919	Columbia Steel Co.	Pittsburgh, Cal.	GE
73	450	450	2080	60	12″ Merchant Mill	Geared	1919	Columbia Steel Co.	Pittsburgh, Cal.	GE
74	450	585	2200	50	14″ Merchant Mill	Geared	1918	Columbia Steel Co.	Los Angeles, Cal.	W
75	450	730–490	4000	25	10″ Merchant Mill	Geared	1917	Atlas Steel Corporation	Dunkirk, N. Y.	W
76	450–360	870–695	2200	60	10″ Merchant Mill	Geared	1913	Cleveland Hardware Co.	Cleveland, Ohio	W
77	450–360	875–700	2200	60	9″ Merchant Mill	Geared	1915	National Lock Washer Co.	Riverside, N. J.	W
78	475–350	240–181	440	25	10″ Merchant Mill	Direct	1914	Kansas City Bolt & Nut Co.	Kansas City, Mo.	W
79	485–360	870–695	2200	60	10″ Merchant Mill	Geared	1915	Old Dominion Iron & Nail Co.	Richmond, Va.	W
80	500	88	6600	25	16″ Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
81	500–385–250	130–100–65	440	25	14″ Merchant Mill	Direct	1923	Halcomb Steel Co.	Syracuse, N. Y.	GE
82	500	130–310	600	d.c.	10″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
83	500	150–225	250	d.c.	12″ Merchant Mill	Direct	1919	National Farming Machinery, Ltd.	Montmagny, P. Q.	W
84	500	150–550	600	d.c.	10″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
85	500	150–450	230	d.c.	Merchant Mill	Direct	1928	Barton Spider Web. Co.	Chicago, Ill.	W
86	500	150–300	600	d.c.	10″ Merchant Mill	Direct	1928	Steel Co. of Canada	Hamilton, Ont.	W
87	500	175–350	250	d.c.	12″ Merchant Mill	Direct	1926	Pittsburgh Cruc'ble Steel Co.	Midland, Pa.	GE
88	500	184	2200	25	12″ Merchant Mill	Rope	1905	Ontario Iron & Steel Co.	Welland, Ont.	W
89	500	184	2200	25	16″ Merchant Mill	Direct	1908	Bethlehem Steel Co.	Johnstown, Pa.	W
90	500	190	230	d.c.	18″ Tandem Mer. (Roughing) Mill	Rope	1910	Sharon Steel Hoop Co.	Sharon, Pa.	GE
91	500	200–400	250	d.c.	10″ Cont. Rolling Mill	Coupled	1925	Republic Iron & Steel Co.	Youngstown, Ohio	AC
92	500	200–400	600	d.c.	10″ Merchant Mill	Direct	1928	Steel Co. of Canada	Hamilton, Ont.	W
93	500–330	242–161	440	25	16″ and 10″ Merchant Mill	Direct & Rope	1913	Kansas City Bolt & Nut Co.	Kansas City, Mo.	W
94	500	244	2200	25	10″ Merchant Mill	Direct	1908	Bethlehem Steel Co.	Johnstown, Pa.	W
95	500	250–350	600	d.c.	9″ Merchant Mill	Direct	1921	Missouri Rolling Mill Co.	St. Louis, Mo.	W
96	500	250–500	600	d.c.	10″ Merchant Mill	Direct	1928	Steel Co. of Canada	Hamilton, Ont.	W
97	500	267–800	230	d.c.	Hot Merchant Mill	Geared	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
98	500	267–800	230	d.c.	Hot Merchant Mill	Geared	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
99	500	267–800	230	d.c.	Hot Merchant Mill	Direct	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
100	500	267–800	230	d.c.	Hot Merchant Mill	Direct	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
101	500	267–800	230	d.c.	Hot Merchant Mill	Direct	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
102	500	267–800	230	d.c.	Merchant Mill	Geared	1927	Allegheny Steel Co.	Breckenridge, Pa.	GE
103	500	292	4000	60	8″ Merchant Mill	Direct	1920	Calumet Steel Co.	Chicago, Ill.	W
104	500	320	2200	60	12″ Merchant Mill	Geared	1919	Baltimore & Ohio Railroad	Cumberland, Md.	W
105	500–500	327–200	440	60	9″ Merchant Mill	Direct	1913	Union Rolling Mills Co.	Cleveland, Ohio	GE
106	500	360	2200	25	8″ Merchant Mill	Direct	1912	Bethlehem Steel Co.	Johnstown, Pa.	W
107	500	400–800	230	d.c.	12″–9″ Merchant Mill	Geared	1928	Timken Roller Bearing Co.	Canton, O.	AC
108	500	435	440	60	8″ Merchant Mill	Rope	1911	Carnegie Steel Co., Painter Mill	Pittsburgh, Pa.	W
109	500	435	440	60	8″ Merchant Mill	Rope	1912	Carnegie Steel Co., Painter Mill	Pittsburgh, Pa.	W
110	500	435	440	60	8″ Merchant Mill	Rope	1912	Carnegie Steel Co., Painter Mill	Pittsburgh, Pa.	W
111	500	435	440	60	9″ Merchant (Fin.) Mill	Belted	1914	Carnegie Steel Co., Painter Mill	Pittsburgh, Pa.	W
112	500	435	440	60	10″ Merchant (Fin.) Mill	Belted	1914	Carnegie Steel Co., Painter Mill	Pittsburgh, Pa.	W
113	500	435	2200	60	Merchant Mill	Geared	1916	Seymour Manufacturing Co.	Waterbury, Conn.	W
114	500	480–250	230	d.c.	Merchant Mill	Coupled	1923	Buffalo Bolt Company	N. Tonawanda, N. Y.	CW
115	500	450	2300	60	Merchant Mill	Geared	1916	Pacific Coast Steel Co.	San Francisco, Cal.	GE
116	500	487	6600	25	8″ Merchant Mill	Direct	1913	Minnesota Steel Co.	Duluth, Minn.	W
117	500–500–500	500–375–265	2200	25	10″ Merchant Mill	Direct & Belt	1916	Donner Steel Co.	Buffalo, N. Y.	GE
118	500	500	2300	25	18″ Merchant Mill	Geared	1919	Halcomb Steel Co.	Syracuse, N. Y.	GE
119	500	575–865	2200	60	10″ Merchant Mill	Geared	1921	International Nickel Co.	Huntington, W. Va.	W
120	500	575–865	2200	60	10″ Merchant Mill	Geared	1921	International Nickel Co.	Huntington, W. Va.	W
121	500	600	2200	60	Merchant Mill	Geared	1923	Taunton-New Bedf'd Cop. Co.	Taunton, Mass.	GE
122	500–330	730–485	2200	50	8″ Merchant Mill	Geared	1919	Southern California Iron & SteelCo.	Los Angeles, Cal.	W
123	500–250	750–375	3000	50	Merchant Mill	Geared	1923	Consolidated Rolling Mills Co.	Mexico City, Mex.	GE
124	500–400	775–585	550	40	10″ Merchant Mill	Geared	1917	Cohoes Rolling Mill Co.	Cohoes, N. Y.	W
125	500	870	2200	60	16″ Merchant Mill	Geared	1919	McConway Torley Co.	Pittsburgh, Pa.	W
126	500–400	875–700	550	60	10″ & 14″ Merchant Mill	Geared	1916	The Texas Steel Co.	Fort Worth, Tex.	W
127	500	884	2200	60	9″ Rougher Mill	Geared	1925	Crucible Steel Co.	Atha Works	W
128	500	888–540	6600	60	11″ Finishing Stand. Mil	Coupled		Tennessee Coal, Iron & R. R. Co.	Birmingham, Ala.	AC
129	500–250	890–513 440–256	2200	60	10″ Merchant Mill	Geared	1919	Hunter Crucible Steel Co.	Cleveland, Ohio	W
130	500	900	440	60	10″ Merchant Mill	Geared	1925	Latrobe Elec. Steel Co.	Latrobe, Pa.	GE
131	525	125	2200	25	Merchant Mill	Rope	1910	American Sheet & Tin Plate Co.	Gary, Ind.	GE
132	550	120–300	250	d.c.	11″ Merchant Mill	Direct	1923	Firth Sterling Steel Co.	McKeesport, Pa.	W
133	550	336–588	600	d.c.	9″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
134	550	420–714	600	d.c.	9″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
135	550	420–714	600	d.c.	9″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
136	550–360	875–585	2200	60	12″ Merchant Mill	Geared	1917	Norfolk & Western Railroad Co.	Roanoke, Va.	W
137	550	880	2200	60	16″ Merchant Mill	Geared	1919	Danville Structural Tube Co.	Danville, Pa.	W
138	550	880	2200	60	Merchant Mill	Geared	1921	Danville Structural Tube Co.	Danville, Pa.	W
139	575	300–214	6600	25	10″ Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
140	575–575	375–250	6600	25	8″ Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
141	600	200–300	230	d.c.	9″ Merchant Mill	Direct	1914	United Alloy Steel Corporation	Canton, Ohio	W
142	600	200–300	230	d.c.	9″ Merchant Mill	Direct	1915	United Alloy Steel Corporation	Canton, Ohio	W
143	600	205–515	600	d.c.	Merchant Mill	Geared	1928	American Steel & Wire Co.	Cleveland, O.	W
144	600	205–515	600	d.c.	Merchant Mill	Geared	1928	American Steel & Wire Co.	Cleveland, O.	W
145	600	227–454	230	d.c.	12″–9″ Merchant Mill	Geared	1928	Timken Roller Bearing Co.	Canton, O.	AC

MERCHANT MILL DRIVES—Continued

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
146	600-600	214- 93	6600	25	12″ Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
147	600-525	250-125	2200	25	16″ & 14″ Merchant Mill	Direct & Rope	1913	Bethlehem Steel Co.	Steelton, Pa.	GE
148	600-400-200	321-214-107	440	25	9″ Merchant Mill	Direct	1923	Halcomb Steel Co.	Syracuse, N. Y.	GE
149	600	350-788	250	d.c.	10″ Merchant Mill	Geared	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
150	600	350-788	250	d.c.	10″ Merchant Mill	Geared	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
151	600	350-788	250	d.c.	10″ Merchant Mill	Geared	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
152	600	365	6600	25	10″ Merchant Mill	Direct	1913	Minnesota Steel Co.	Duluth, Minn.	W
153	600-400	375-210	2200	25	9″ Merchant Mill	Direct	1912	Gulf States Steel Co.	Birmingham, Ala.	GE
154	600	390	440	60	20″ Merchant Mill	Geared	1916	Stanley Works	New Haven, Conn.	W
155	600	400-800	250	d.c.	18″ Merchant Mill	Geared	1926	Pittsburgh Crucible Steel Co.	Midland, Pa.	GE
156	600	450-900	600	d.c.	10″ Merchant Mill	Geared	1928	Steel Co. of Canada	Hamilton, Ont.	W
157	600	450-900	600	d.c.	10″ Merchant Mill	Geared	1928	Steel Co. of Canada	Hamilton, Ont.	W
158	600-600-600	469-375-281	2200	25	8″ Merchant Mill	Direct	1919	Donner Steel Co.	Buffalo, N. Y.	GE
159	600	485	2200	25	10″ Merchant (Fin.) Mill	Direct	1912	Laclede Steel Co.	Alton, Ill.	W
160	600	485	440	25	20″ Merchant Mill	Geared	1915	Hess Steel Corporation	Baltimore, Md.	W
161	600	500	2200	60	20″ Merchant Mill	Geared	1916	Carpenter Steel Co.	Reading, Pa.	W
162	600	500	2200	60	16″ Merchant Mill	Geared	1917	Central Steel Co.	Massillon, Ohio	W
163	600	500	440	25	16″ Merchant Mill	Geared	1919	Buffalo Bolt Co.	N. Tonawanda, N. Y.	GE
164	600-440	514-300	4150	60	10″ Merchant Mill	Rope	1912	W. Ames & Co.	Jersey City, N. J.	GE
165	600	585-325	550	40	16″ Merchant Mill	Geared	1917	Cohoes Rolling Mill Co.	Cohoes, N. Y.	W
166	600-500-400	500-500-400	2200	25	Merchant Mill, No. 10	Direct	1916	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
167	600	600	2200	60	8″ Merchant Mill	Geared	1928	Timken Roller Bearing Co.	Canton, O.	GE
168	600	705	2200	60	Merchant Mill	Geared	1927	Pollak Steel Co.	Cincinnati, O.	W
169	600	900	2300	60	10″ Mill	Geared	1927	Copperweld Steel Co.	Glassport, Pa.	GE
170	650	160	440	60	14″ Guide Mill	Coupled		Withrow Steel Co.	Neville Island, Pa.	AC
171	650	184	6600	25	18″ Merchant Mill	Direct	1909	Indiana Steel Co.	Gary, Ind.	W
172	650	184	6600	25	14″ Merchant Mill	Direct	1909	Indiana Steel Co.	Gary, Ind.	W
173	650	200	440	60	14″ Guide Mill	Coupled		Withrow Steel Co.	Neville Island, Pa.	AC
174	650	210	6600	25	12″ Merchant Mill	Geared	1909	Indiana Steel Co.	Gary, Ind.	W
175	650	293	2200	60	9″ Merchant Mill	Rope	1919	Harrisburg Pipe & Pipe Bending Co.	Harrisburg, Pa.	W
176	650	500	6600	25	10″ Merchant Mill	Direct	1916	Illinois Steel Co.	Gary, Ind.	GE
177	650	500	6600	25	10″ Merchant Mill	Direct	1916	Illinois Steel Co.	Gary, Ind.	GE
178	700	130-310	600	d.c.	10″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
179	700	130-310	600	d.c.	10″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
180	700	187	2200	25	14″ Merchant Mill	Direct	1920	Donner Steel Co.	Buffalo, NY.	GE
181	700	210-660	600	d.c.	10″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
182	700	210-660	600	d.c.	10″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
183	700	240-450	250	d.c.	9″ Merchant Mill	Direct	1925	Crucible Steel Co.	Pittsburgh, Pa.	GE
184	700	270-520	250	d.c.	10″ Merchant Mill	Direct	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
185	700	364	2200	25	8″ Merchant Mill	Direct	1912	Laclede Steel Co.	Alton, Ill.	W
186	700-600-400	400-300-200	2200	25	Merchant Mill, No. 10	Direct	1916	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
187	700-600-400	400-300-200	2200	25	Merchant Mill, No. 10	Belt	1916	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
188	700	440	2200	60	16″ Mill	Geared	1926	Connors Steel Co.	Birmingham, Ala.	AC
189	700	480-290	2200	25	12″ Merchant Mill	Geared	1916	Halcomb Steel Co.	Syracuse, N. Y.	W
190	700	730-490	4000	25	14″ Merchant Mill	Geared	1916	Atlas Steel Corporation	Dunkirk, N. Y.	W
191	700	735	4000	25	14″ Merchant Mill	Geared	1920	Atlas Steel Corporation	Dunkirk, N. Y.	W
192	700	880-530	2200	60	10″ Finishing Mill	Geared	1923	Crucible Steel Co. of America, Park Works	Pittsburgh, Pa.	W
193	750	150-250	600	d.c.	14″ Merchant Mill	Direct	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
194	750	200-600	600	d.c.	Merchant Mill	Geared	1928	American Steel & Wire Co.	Cleveland, O.	W
195	750	277	2200	66	18″ Merchant Mill	Geared	1915	Pacific Coast Steel Co.	San Francisco, Cal.	GE
196	750	360-600	250	d.c.	10″ Merchant Mill	Direct	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
197	750	514	2200	60	Merchant Mill	Geared	1920	W. M. Lewis	Indianapolis, Ind.	AC
198	800	163	2200	25	22″ Merchant Mill	Rope	1905	Ontario Iron & Steel Co.	Welland, Ont.	W
199	800	189	2200	60	Merchant Mill	Direct	1925	Pacific Coast Steel Co.	San Francisco, Cal.	CW
200	800	200-400	250	d.c.	9″ 7 Stand Merchant Mill	Coupled	1926	Crucible Steel Co. of America	Harrison, N. J.	AC
201	800	200-415	600	d.c.	12″ Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	GE
202	800	200-415	600	d.c.	12″ Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	GE
203	800	200-415	600	d.c.	12″ Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	GE
204	800	200-600	500	d.c.	10″ Merchant Rod & Strip Mill	Geared	1927	Ford Motor Co.	Detroit, Mich.	W
205	800-800	214-167	6600	25	16″ Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
206	800	240-480	600	d.c.	12″ Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	GE
207	800	257	2200	60	18″ Merchant Mill	Geared	1919	Columbia Steel Co.	Pittsburgh, Cal.	GE
208	800	268	2200	60	14″ & 10″ Merchant Mill	Rope	1912	United Alloy Steel Corporation	Canton, Ohio	W
209	800	275-550	700	d.c.	12″ Merchant Mill	Geared	1925	Penn Seaboard Steel Co.	New Castle, Del.	GE
210	800	275-550	700	d.c.	12″ Merchant Mill	Geared	1925	Penn Seaboard Steel Co.	New Castle, Del.	GE
211	800	275-550	700	d.c.	9″ Merchant Mill	Direct	1925	Penn Seaboard Steel Co.	New Castle, Del.	GE
212	800	300	2300	60	10″ Merchant Mill	Geared	1928	Laclede Steel Co.	Madison, Ill.	GE
213	800	320	440	60	9″ Merchant Mill	Belted	1914	Carnegie Steel Co. Painter Mill	Pittsburgh, Pa.	W
214	800	320	440	60	10 ″ Merchant Mill	Belted	1914	Carnegie Steel Co. Painter Mill	Pittsburgh, Pa.	W
215	800	350-700	600	d.c.	20″ Merchant (Breakd'n)	Geared	1921	Driver Harris Co.	Harrison, N. J.	W
216	800	350-750	600	d.c.	8″ Merchant Mill Cont.	Direct	1925	Inland Steel Co.	Indiana Harbor, Ind.	GE
217	800	353	2200	60	12″-5 Stand. Merch. Mill	Belt	1924	United Steel Co.	Everett, Wash.	W
333	800	367	2200	25	8″ Merchant Mill	Direct	1917	Donner Steel Co.	BuZalo, N. Y.	W
444	800	375	2200	25	Merchant Mill	Geared	1920	Bethlehem Steel Co.	Johnstown, Pa.	GE
218	800	400-600	600	d.c.	16″ Merchant Mill	Geared	1921	Missouri Rolling Mill Co.	St. Louis, Mo.	W
219	800	400-800	600	d.c.	Rod and Merchant Mill	Geared	1928	Atlantic Steel Co.	Atlanta, Ga.	GE
220	800	410-720	230	d.c.	16″ Merchant (Rougher)	Geared	1923	Timken Roller Bearing Co.	Canton, Ohio	W
221	800	440	2200	60	18″ Merchant (Fin.) Mill	Geared	1918	Canton Sheet Steel Co.	Canton, Ohio	W
222	800	510-870	250	d.c.	10″ Merchant Mill	Direct	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
223	800	705	2200	60	12″ Merchant Mill	Geared	1919	McConway Torley Co.	Pittsburgh, Pa.	W
224	800	730-365	2200	50	12″ Merchant Mill	Geared	1917	Columbia Steel Co.	Los Angeles, Cal.	W
225	800	730-365	2200	50	22″ Merchant Mill	Geared	1917	Columbia SteelCo.	Los Angeles, Cal.	W
226	800	730-485	2200	50	12″ Merchant Mill	Geared	1919	Southern CaliforniaIron & Steel Co.	Los Angeles, Cal.	W
227	800	760-1050	250	d.c.	10″ Merchant Mill	Direct	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
228	800	875-700	2200	60	16″ Merchant Mill	Geared	1920	Kansas City Bolt & Nut Co.	Kansas City, Mo.	W
229	800	892-623	2200	60	20″ Merchant (Fin.) Mill	Geared	1918	Hoosier Rolling Mill	Terre Haute Ind.	W
230	800-800	900-720	2200	60	9″ Merchant Mill	Geared	1923	Knoxville Iron Co.	Knoxville, Tenn.	GE
231	800-800	900-720	2200	60	9″ Merchant Mill	Geared	1923	Knoxville Iron Co.	Knoxville, Tenn.	GE
232	840-700-560	360-300-240	6600	25	9″ Merchant Mill	Direct	1925	Bethlehem Steel Co.	Bethlehem, Pa.	GE
233	850-570	214-143	6600	25	Merchant Mill	Direct	1920	Illinois Steel Co.	Gary, Ind.	GE
234	850-850	214-187	6600	25	10″ Merchant Mill	Rope	1916	Illinois Steel Co.	Gary, Ind.	GE
235	850-850	214-187	6600	26	10″ Merchant Mill	Rope	1916	Illinois Steel Co.	Gary, Ind.	GE
236	800	94	2200	25	18″ Merchant Mill	Direct	1912	Gulf States Steel Co.	Birmingham, Ala.	GE
237	800	100	6600	25	16″ Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
238	850	514	2200	60	14″ Merchant Mill	Geared	1927	Copperweld Steel Co.	Glassport, Pa.	W
239	900-900	214-150	2200	25	12″ Merchant Mill	Direct	1910	Algoma Steel Co.	Sault St. Marie, Can.	GE
240	1000	184	2200	25	16″ Merchant Mill	Direct	1908	Bethlehem Steel Co.	Johnstown, Pa.	W
241	1000	189-½	2200	60	Wire Mill	Direct	1928	American Steel & Wire Co.	Cleveland, Ohio	W
242	1000	200-600	600	d.c.	10″ Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	W
243	1000	250	2200	60	18″ Merchant Mill	Geared	1918	Canton Sheet & Steel Co.	Canton, Ohio	W
244	1000	290-500	600	d.c.	9″ Merchant Mill	Geared	1926	Illinois Steel Co.	Gary, Indiana	GE
245	1000	295	2200	60	12″ Cont. and 10″ Merchant Mill	Rope & Direct	1920	Kansas City Bolt & Nut Co.	Kansas City, Mo.	W
246	1000	300	2200	25	10″ Merchant Mill	Geared	1916	Halcomb Steel Co.	Syracuse, N. Y.	GE
247	1000	350-150	2200	60	12″ Merchant Mill	Direct	1918	Central Steel Co.	Massillon, Ohio	W
248	1000	365	2200	50	Merchant Mill	Geared	1923	Columbia Steel Co.	Torrance, Cal.	W

MERCHANT MILL DRIVES—Continued

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
249	1000	375	4400	25	Merchant Mill	Geared	1919	Buffalo Bolt Co.	N. Tonawanda, N. Y.	GE
250	1000	400–800	230	d.c.	10″ Merchant Mill	Geared	1928	Bourne Fuller Co.	Cleveland, Ohio	GE
251	1000	450–900	600	d.c.	10″ Merchant Mill	Geared	1928	Steel Co. of Canada	Hamilton, Ont.	W
252	1000	518–800	250	d.c.	20″ Merchant Mill	Geared	1919	National Farming Machinery, Ltd.	Montmagny, P. Q.	W
253	1000	590–450	4000	60	14″ Merchant Mill	Geared	1920	Calumet Steel Co.	Chicago, Ill.	W
254	1000	590–450	4000	60	14″ Merchant Mill	Geared	1920	Calumet Steel Co.	Chicago, Ill.	W
255	1000	725	2200	25	12″ Merchant Mill	Geared	1922	Burlington Steel Co., Ltd.	Hamilton, Ont.	W
256	1100	294–205	2200	60	20″ Merchant Mill	Rope	1912	United Alloy Steel Corporation	Canton, Ohio	W
257	1190–875–525	350–250–150	2200	25	Merchant Mill	Direct-Rope	1925	Bethlehem Steel Co.	Lebanon, Pa.	GE
258										
259	1200–1200	150–250	230	d.c.	12″ Merchant Mill	Direct	1920	Timken Roller Bearing Co.	Canton, Ohio	GE
260	1200	292	2200	25	12″ Cont. and 10″	Direct				
261	1200	160–320	250	d.c.	12″ Merchant Mill	Direct	1926	Pittsburgh Crucible Steel Co.	Midland, Pa.	GE
					Merchant Mill	& Rope	1912	Laclede Steel Co.	Alton, Ill.	W
262	1200–1150–800	300–214–150	2200	25	Merchant Mill, No. 10	Geared	1916	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
263	1200–1000–800	300–250–200	4400	25	14″ Merchant Mill	Direct	1919	Buffalo Bolt Co.	N. Tonawanda, N. Y.	GE
264	1200	300–500	600	d.c.	10″ Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	W
265	1200	300–600	230	d.c.	12″-9″ Merchant Mill	Geared	1928	Timken Roller Bearing Co.	Canton, Ohio	AC
266	1200–1200–865	340–277–200	2200	60	11″ Merchant Mill	Geared	1927	Bourne Fuller Co.	Cleveland, Ohio	GE
267	1200	368	2200	50	20″ Merchant Mill	Geared	1919	Southern California Iron & Steel Co.	Los Angeles, Cal.	W
268	1200	485	6400	25	12″ Merchant Mill	Geared	1916	American Steel & Wire Co.	Cleveland, Ohio	W
269	1200	514	2200	60	8″ Merchant Mill	Geared	1928	Timken Roller Bearing Co.	Canton, Ohio	GE
270	1200	590–407	2200	60	20″ Mer. (Rough.) Mill	Geared	1918	Hoosier Rolling Mill Co.	Terre Haute, Ind.	W
271	1250	300–550	500	d.c.	10″ Merchant Mill	Direct	1927	Ford Motor Co.	Detroit, Mich.	W
272	1250	375	2200	25	Merchants Bar Mill	Geared	1919	Valley Steel Co.	Milwaukee, Wis.	AC
273	1250	712–430	6600	60	3 Stand 12″ Mill	Coupled	1921	Tennessee Coal, Iron & R. R. Co.	Birmingham, Ala.	AC
274	1300– 900	214–140	2200	25	12″ Merchant Mill	Direct	1912	Gulf States Steel Co.	Birmingham, Ala.	GE
275	1300–1300	214–187	6600	25	10″ Merchant Mill	Geared	1916	Illinois Steel Co.	Gary, Ind.	GE
276	1400– 945	600–405	2200	60	21″ Merchant Mill	Geared	1915	Union Rolling Mills Co.	Cleveland, Ohio	GE
277	1500	50–80	600	d.c.	8″ Merchant Cont. Mill	Direct	1925	Inland Steel Co.	Indiana Harbor, Ind.	GE
278	1500	80	2200	60	Morgan Cont. Mill	Coupled	1920	Interstate Iron & Steel Co.	Chicago, Ill.	AC
279	1500	94	2200	25	18″ Merchant Mill	Direct	1910	Algoma Steel Co.	S'lt. St. Marie, Can.	GE
280	1500	100–150	600	d.c.	14″ Merchant Mill	Direct	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
281	1500	200–300	600	d.c.	10″ Merchant Mill	Direct	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
282	1500	218–145	6600	25	18″ Merchant Mill	Geared	1916	Carnegie Steel Co.	Duquesne, Pa.	W
283	1500–1250–875	300–250–175	2200	50	Merchant Mill	Direct	1925	Southern Calif. Iron & Steel Co.	Los Angeles, Cal.	GE
284	1500–1200–900	320–275–200	2200	60	10″ Merchant Mill	Geared	1925	Pacific Coast Steel Co.	San Francisco, Cal.	GE
285	1500	360–240	6600	25	12″ Merchant Mill	Rope	1916	Carnegie Steel Co.	Duquesne, Pa.	W
286	1500–1125	375–281	2200	25	10″ Merchant Mill	Geared	1916	Donner Steel Co.	Buffalo, N. Y.	GE
287	1500	593	6600	60	6 Stand 11″ Mill	Coupled	1921	Tennessee Coal, Iron & R. R. Co.	Birmingham, Ala.	AC
288	1500	890–540	6600	60	4 Stand 12″ Mill	Coupled	1921	Tennessee Coal, Iron & R. R. Co.	Birmingham, Ala.	AC
289	1750–1750–1140	485–360–235	2200	60	16″-14″ Merchant Mill	Geared	1927	Bourne Fuller Co.	Cleveland, Ohio	GE
290	1800	200–400	600	d.c.	8″ Merchant Cont. Mill	Geared	1925	Inland Steel Co.	Indiana Harbor, Ind.	GE
291	1800–1800	250–125	6600	25	22″ Merchant Mill	Geared	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
292	1800	350–640	500	d.c.	18″ Rougher Merch. Mill	Geared	1926	Pittsburgh Crucible Steel Co.	Midland, Pa.	AC
293	1800	475–550	550	d.c.	Merchant Mill	Direct	1928	Pittsurgh Steel Co.	Monessen, Pa.	CW
294	1800	550–650	250	d.c.	22″ Merchant Mill	Geared	1925	Crucible Steel Co.	Pittsburgh, Pa.	GE
295	2000	94	2200	25	18″ Merchant Mill	Direct	1912	Forged Steel Wheel Co.	Butler, Pa.	GE
296	2000	113	6600	25	12″ Merchant Mill	Direct	1909	Indiana Steel Co.	Gary, Ind.	W
297	2000	134–275	600	d.c.	10″ Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	W
298	2000	137½–275	500	d.c.	10″ Merchant-Rod & Strip Mill	Direct	1927	Ford Motor Co.	Detroit, Mich.	W
299	2000	163–113	6600	25	10″ Merchant Mill	Direct	1909	Indiana Steel Co.	Gary, Ind.	W
300	2000	230–460	600	d.c.	Merchant Mill	Direct	1925	International Harvester Co.	Chicago, Ill.	W
301	2000	230–460	600	d.c.	Merchant Mill	Direct	1925	International Harvester Co.	Chicago, Ill.	W
302	2000	230–460	600	d.c.	Merchant Mill	Direct	1925	International Harvester Co.	Chicago, Ill.	W
303	2000	250–150	2200	60	Morgan Cont. Mill	Coupled	1919	Interstate Iron & Steel Co.	Chicago, Ill.	AC
304	2000	315–500	600	d.c.	10″ Merchant Mill	Geared	1926	Illinois Steel Co.	Gary Ind.	GE
305	2000	500–300	2200	50	22″ Merchant Mill	Geared	1927	Columbia Steel Corp.	Torrance, Calif.	GE
306	2500	113–91	6600	25	12″ Merchant Mill	Direct	1909	Indiana Steel Co.	Gary, Ind.	W
307	3000	209	6600	25	12″ and 16″ Merchant Mill	Rope & Geared	1913	Minnesota Steel Co.	Duluth, Minn.	W
308	3000	375	2200	25	14″ Merchant Mill	Geared	1916	Donner Steel Co.	Buffalo, N. Y.	GE
309	3000	505–300	2200	60	12″ Merchant Mill	Geared	1920	United Alloy Steel Corporation	Canton, Ohio	W
310	3200	91	6600	25	18″ Merchant Mill	Geared	1909	Indiana Steel Co.	Gary, Ind.	W
311	3200	91	6600	25	14″ Merchant Mill	Geared	1909	Indiana Steel Co.	Gary, Ind.	W
312	4000	147	6600	25	20″ Merchant Mill	Geared	1916	Illinois Steel Co.	Gary, Ind.	W
313	4500–4500	67.5–110	500	d.c.	14″ Merchant Mill	Geared	1923	Ford Motor Co.	Detroit, Mich.	GE
314	4500–4500	500–300	2200	25	14″ Merchant Mill	Geared	1923	Inland Steel Co.	Indiana Harbor, Ind.	GE
315	5610–4500–3370	156-125-93.6	6600	25	12″ Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, O.	GE

WIRE MILLS

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1	300	375	2200	25	Wire Mill	Geared	1910	Bethlehem Steel Co.	Johnstown, Pa.	GE
2	300	375	2200	25	Wire Mill	Geared	1910	Bethlehem Steel Co.	Johnstown, Pa.	GE
3	300	375	2200	25	Wire Mill	Geared	1910	Bethlehem Steel Co.	Johnstown, Pa.	GE
4	300	375	2200	25	Wire Mill	Geared	1910	Bethlehem Steel Co.	Johnstown, Pa.	GE
5	300	375	2200	25	Wire Mill	Belt	1915	American Steel & Wire Co.	Cleveland, Ohio	GE
6	300	375	2200	25	Wire Mill	Belt	1915	American Steel & Wire Co.	Cleveland, Ohio	GE
7	300	375	2200	25	Wire Mill	Belt	1915	American Steel & Wire Co.	Cleveland, Ohio	GE
8	300	375	2200	25	Wire Mill	Belt	1915	American Steel & Wire Co.	Cleveland, Ohio	GE
9	300	375	2200	25	Wire Mill	Belt	1915	American Steel & Wire Co.	Cleveland, Ohio	GE
10	300	450	440	60	Wire Mill		1914	American Steel & Wire Co.	Joliet, Ill.	AC
11	300	450	440	60	Wire Mill	Geared	1914	American Steel & Wire Co.	Joliet, Ill.	AC
12	300	600	2300	60	Wire Mill	Geared	1917	American Steel & Wire Co.	Waukegan, Ill.	GE
13	325	600	2300	60	Wire Mill	Geared	1917	American Steel & Wire Co.	Waukegan, Ill.	GE
14	350	300	230	d.c.	Wire Draw Bench	Coupled	1908	Pittsburgh Steel Co.	Monessen, Pa.	CW
15	350	300	230	d.c.	Wire Draw Bench	Coupled	1908	Pittsburgh Steel Co.	Monessen, Pa.	CW
16	350	300	230	d.c.	Wire Draw Bench	Coupled	1908	Pittsburgh Steel Co.	Monessen, Pa.	CW
17	350	300	230	d.c.	Wire Draw Bench	Coupled	1911	Pittsburgh Steel Co.	Monessen, Pa.	CW
18	400	600	2200	60	Wire Rod Mill	Geared	1917	Rome Wire Co.	Rome, N. Y.	AC
19	400	600	440	60	Wire Rod Mill	Coupled	1917	Rome Wire Co.	Rome, N. Y.	AC
20	450	720	2200	60	Wire Bench Mill	Geared	1928	Gulf States Steel Co.	Alabama City, Ala.	W
21	450	720	2200	60	Wire Bench Mill	Geared	1928	Gulf States Steel Co.	Alabama City, Ala.	W
22	450	720	2200	60	Wire Bench Mill	Geared	1928	Gulf States Steel Co.	Alabama City, Ala.	W
23	500	450	440	60	Wire Mill	Geared	1916	Waclark Wire Co.	Elizabeth, N. J.	GE
24	750	514	2200	60	Wire Rod Mill	Geared	1917	Kokomo Steel & Wire Co.	Kokomo, Ind.	AC
25	800	450	2200	60	Wire Rod Mill	Coupled	1919	Black Steel & Wire Co.	Kansas City, Mo.	AC
26	900	163	2200	60	Wire Rod Mill	Coupled	1917	Kokomo Steel & Wire Co.	Kokomo, Ind.	AC
27	900	163	2200	60	Wire Rod Mill	Rope	1919	Black Steel & Wire Co.	Kansas City, Mo.	AC
28	1200	514	2200	60	Wire Rod Mill	Geared	1917	Kokomo Steel & Wire Co.	Kokomo, Ind.	AC
29	1300	360	2200	60	Wire Rod Mill	Coupled	1917	Kokomo Steel & Wire Co.	Kokomo, Ind.	AC
30	1500	514	2200	60	Wire Rod Mill	Coupled	1917	Kokomo Steel & Wire Co.	Kokomo, Ind.	AC

WHEEL MILLS

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1	300	450–750	230	d.c.	Wheel Mill	Geared	1913	Bethlehem Steel Co.	Johnstown, Pa.	AC
2	300	450–750	230	d.c.	Wheel Mill	Geared	1913	Bethlehem Steel Co.	Johnstown, Pa.	AC
3	500	155–500	250	d.c.	Tyre Mill	Direct	1923	McConway Torley Co.	Pittsburgh, Pa.	W
4	500	214	6600	25	Axle Mill	Geared	1909	Illinois Steel Co.	Gary, Ind.	GE
5	500	375	2200	25	Wheel Mill	Geared	1913	Bethlehem Steel Co.	Johnstown, Pa.	AC
6	700	200	240	d.c.	Pontoon Mill	Direct	1926	M. W. Kellogg	Newark, N. J.	CW
7	700	200	240	d.c.	Pontoon Mill	Direct	1926	M. W. Kellogg	Newark, N. J.	CW
8	750	130	550	d.c.	Wheel Mill	Direct	1915	Carnegie Steel Co.	McKees Rocks, Pa.	GE
9	750	160	550	d.c.	Wheel Mill	Direct	1916	Edgewater Steel Co.	Oakmont, Pa.	GE
10	750	160	550	d.c.	Wheel Mill	Direct	1916	Edgewater Steel Co.	Oakmont, Pa.	GE
11	750	160	550	d.c.	Wheel Mill	Direct	1919	Edgewater Steel Co.	Oakmont, Pa.	GE
12	750	190–375	245	d.c.	Pontoon Mill	Coupled	1927	M. W. Kellogg Co.	Jersey City, N. J.	CW
13	750	190–375	245	d.c.	Pontoon Mill	Coupled	1927	M. W. Kellogg Co.	Jersey City, N. J.	CW
14	900–720	200–160	220	d.c.	Wheel Mill	Geared	1906	Bethlehem Steel Co.	Johnstown, Pa.	GE
15	1000	137	6600	25	Wheel Mill	Geared	1916	Illinois Steel Co.	Gary, Ind.	AC
16	1000	375	2200	25	Wheel Mill	Geared	1913	Bethlehem Steel Co.	Johnstown, Pa.	AC
17	2000	375	2200	25	Wheel Mill	Geared	1916	Bethlehem Steel Co.	Johnstown, Pa.	AC

ALUMINUM, BRASS, COPPER AND NON-FERROUS MILL DRIVES

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1	300	290	2200	25	Brass Mill	Geared	1920	American Brass Co.	Buffalo, N. Y.	W
2	300	290	2200	25	Brass Mill	Geared	1920	American Brass Co.	Buffalo, N. Y.	W
3	300	290	2200	25	Brass Mill	Geared	1920	American Brass Co.	Buffalo, N. Y.	W
4	300	290	2200	25	Brass Mill	Geared	1920	American Brass Co.	Buffalo, N. Y.	W
5	300	300–600	230	d.c.	20″ x 30″ Brass Mill	Geared	1920	West Virginia Metal Products Co.	Fairmont, W. Va.	W
6	300	300–600	230	d.c.	20″ x 30″ Brass Mill	Geared	1920	West Virginia Metal Products Co.	Fairmont, W. Va.	W
7	300	300–600	230	d.c.	22″ x 36″ Brass Mill	Geared	1920	West Virginia Metal Products Co.	Fairmont, W. Va.	W
8	300	300–600	230	d.c.	22″ x 36″ Brass Mill	Geared	1920	West Virginia Metal Products Co.	Fairmont, W. Va.	W
9	300	300	2200	60	26″ Cold Mill	Coupled	1921	International Nickel Co.	Huntington, W. Va.	AC
10	300–400	400–800	230	d.c.	14″-4-High Tandem Copper Mill	Geared	1927	Rome Brass & Copper Co.	Rome, N. Y.	GE
11	300	435	2200	60	24″ x 48″ Copper Mill	Geared	1920	West Virginia Metal Products Co.	Fairmont, W. Va.	W
12	300	435	2200	60	18″ Copper Mill	Geared	1920	West Virginia Metal Products Co.	Fairmont, W. Va.	W
13	300	450	440	60	Copper & Brass Rolling Mill	Geared	1927	New Haven Copper Co.	Seymour, Conn.	EM
14	300	500		60	Brass Mill	Coupled	1917	British American Metals Co.	Plainfield, N. J.	CW
15	300	514	440	60	Brass Mill	Geared	1915	Chase Metal Works	Waterbury, Conn.	GE
16	300	514	550	60	Brass Sheet Mill	Geared	1919	American Brass Company	Hastings, N. Y.	GE
17	300	514	440	60	Copper & Brass Rolling Mill	Geared	1924	Dallas Brass & Copper Co.	Chicago, Ill.	EM
18	300	514	440	60	Copper & Brass Rolling Mill	Geared	1924	Dallas Brass & Copper Co.	Chicago, Ill.	EM
19	300	514	440	60	Copper & Brass Rolling Mill	Geared	1924	Dallas Brass & Copper Co.	Chicago, Ill.	EM
20	300	514	440	60	Copper & Brass Rolling Mill	Geared	1928	Dallas Brass & Copper Co.	Chicago, Ill.	EM
21	300	585	440	60	18″ Copper (Rough.) Mill	Chain	1916	Standard Underground Cable Co.	Perth Amboy, N. J.	W
22	300	600	2200	60	Brass Mill	Geared	1915	Chase Metal Works	Waterbury, Conn.	GE
23	300	600	440	60	Brass Mill	Geared	1919	Bristol Brass Co.	Bristol, Conn.	GE
24	300	600	440	60	Brass Mill		1920	Detroit Copper & Brass Co.	Detroit, Mich.	AC
25	300	600	440	60	Copper Strip Mill	Geared	1925	Detroit Copper & Brass Co.	Detroit, Mich.	CW
26	350	250	440	25	Brass Mill	Geared	1921	Harrison Radiator Corp.	Lockport, N. Y.	GE
27	350–350	275–470	375	d.c.	Reversing Copper Mill	Geared	1920	American Brass Co.	Buffalo, N. Y.	GE
28	350–350	275–470	375	d.c.	Reversing Copper Mill	Geared	1920	American Brass Co.	Buffalo, N. Y.	GE
29	350–350	275–470	375	d.c.	Reversing Copper Mill	Geared	1920	American Brass Co.	Kenosha, Wis.	GE
30	350–350	275–470	375	d.c.	Reversing Copper Mill	Geared	1922	Taunton-New Bedf'd Copper Co.	Taunton, Mass.	GE
31	350	400	2200	60	Wire Rod Mill	Geared	1918	Taunton New Bedf'd Copper Co.	New Bedford, Mass.	AC
32	350	400	2200	60	Wire Rod Mill	Coupled	1918	Taunton New Bedf'd Copper Co.	New Bedford, Mass.	AC
33	350	400	2200	60	Wire Rod Mill	Coupled	1918	Taunton New Bedf'd Copper Co.	New Bedford, Mass.	AC
34	350	490	2200	25	Brass Mill	Geared	1920	American Brass Co.	Buffalo, N. Y.	W
35	350	490	2200	25	Brass Mill	Geared	1920	American Brass Co.	Buffalo, N. Y.	W
36	400	277	2200	60	Copper Rod Mill	Direct	1927	Washburn Wire Co.	Phillipsdale, R. I.	AC
37	400	277	440	60	Chromel Mill	Direct	1928	Hoskins Mfg. Co.	Detroit, Mich.	W
38	400	300	440	60	Copper & Brass Rolling Mill	Geared	1928	Dallas Brass & Copper Co.	Chicago, Ill.	EM
39	400	300	440	60	Copper & Brass Rolling Mill	Geared	1927	Dallas Brass & Copper Co.	Chicago, Ill.	EM
40	400	300	440	60	Copper & Brass Rolling Mill	Geared	1927	Dallas Brass & Copper Co.	Chicago, Ill.	EM
41	400	350	440	60	9″ Copper (Fin.) Mill	Direct	1916	Standard Underground Cable Co.	Perth Amboy, N. J.	W
42	400	352	2200	60	Copper Rod Mill	Geared	1923	American Brass Company	Kenosha, Wis.	W
43	400	360	2200	60	Brass Mill	Geared	1917	American Brass Co.	Waterbury, Conn.	GE
44	400	360	2200	60	Brass Mill	Geared	1917	American Brass Co.	Waterbury, Conn.	GE
45	400	360	2200	60	Brass Mill	Geared	1921	American Brass Co.	Torrington, Conn.	GE
46	400	360	2200	60	Brass Mill	Geared	1921	American Brass Co.	Torrington, Conn.	GE
47	400	400	2200	60	Copper Rod Mill	Direct	1927	Washburn Wire Co.	Phillipsdale, R. I.	AC
48	400	435	2200	60	Aluminum Mill	Geared	1918	U. S. Aluminum Co.	New Kensington, Pa.	W
49	400	435	2200	60	Aluminum Mill	Geared	1918	U. S. Aluminum Co.	New Kensington, Pa.	W
50	400	435	2200	60	Aluminum Mill	Geared	1919	U. S. Aluminum Co.	Edgewater, N. J.	W
51	400	440	2200	60	Copper Rod Mill	Geared	1923	American Brass Company	Kenosha, Wis.	W
52	400	450	2200	60	Brass Mill	Geared	1917	American Brass Company	Waterbury, Conn.	GE
53	400	450	440	60	Brass Sheet Mill	Geared	1920	Detroit Copper & Brass Co.	Detroit, Mich.	GE
54	400	450	440	60	Sheet Mill	Geared	1924	New Jersey Zinc Co.	Palmerton, Pa.	GE
55	400	450	440	60	Sheet Mill	Geared	1924	New Jersey Zinc Co.	Palmerton, Pa.	GE
56	400	514	2200	60	Brass Tubes	Geared	1915	American Brass Co.	Waterbury, Conn.	GE
57	400	514	2200	60	Brass Tubes	Geared	1915	American Brass Co.	Waterbury, Conn.	GE
58	400	514	440	60	16″ Copper Bar Mill	Geared	1916	Waclark Wire Co.	Elizabeth, N. J.	GE
59	400	514	2200	60	Brass Mill	Geared	1922	Western Cartridge Co.	East Alton, Ill.	GE
60	400	514	2200	60	20″ Flat Mill	Geared	1915	American Brass Company	Kenosha, Wis.	AC
61	400	514	2200	60	24″ Roughing Mill	Geared	1915	American Brass Company	Kenosha, Wis.	AC
62	400	514	2200	60	18″ Bar Mill	Geared	1915	American Brass Company	Kenosha, Wis.	AC
63	400	575	440	60	Sheet Copper Rolling Mill	Geared	1923	American Metal Products Co.	Milwaukee, Wis.	W
64	400	600	440	60	Brass Mill	Geared	1917	Rome Brass & Copper Co.	Rome, N. Y.	GE
65	400	600	2200	60	Brass Mill	Geared	1921	American Brass Co.	Torrington, Conn.	GE
66	400	600	2200	60	Zinc Mill	Geared	1922	Ball Bros. Glass Co.	Muncie, Ind.	GE
67	400	600	2200	60	Brass Rolling Mill	Geared	1925	American Brass Co.	Torrington, Conn.	GE
68	400	690	2300	60	Brass Mill	Geared	1928	Chase Companies, Inc.	Waterville, Conn.	GE
69	400	600	2300	60	Brass Mill	Geared	1928	Chase Companies, Inc.	Waterville, Conn.	GE
70	400	720	2200	60	Copper Mill	Geared	1920	Rome Wire Co.	Rome, N. Y.	GE

ALUMINUM, BRASS, COPPER AND NON-FERROUS MILL DRIVES—Continued

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
71	400	720	550	60	Copper Mill	Geared	1920	Phillips Wire Co.	Pawtucket, R. I.	GE
72	400	720	4600	60	Copper Mills	Geared	1927	Higgins Brass & Mfg. Co.	Detroit, Mich.	GE
73	400	720	4600	60	Copper Mills	Geared	1927	Higgins Brass & Mfg. Co.	Detroit, Mich.	GE
74	400-200	800-400	230	d.c.	Copper Sheet Mill	Geared	1925	Rome Brass & Copper Co.	Rome, N. Y.	GE
75	400	900	550	60	Brass Mill	Geared	1920	American Brass Company	Ansonia, Conn.	GE
76	400	900	550	60	Brass Mill	Geared	1920	American Brass Company	Ansonia, Conn.	GE
77	400	900	550	60	Brass Mill	Geared	1920	American Brass Company	Ansonia, Conn.	GE
78	400	900	550	60	Brass Mill	Geared	1920	American Brass Company	Ansonia, Conn.	GE
79	400	900	550	60	Brass Mill	Geared	1921	American Brass Company	Ansonia, Conn.	GE
80	450	200-400	230	d.c.	Zinc Sheet Mill 26" x 72"	Geared	1924	Illinois Zinc Co.	Peru, Illinois	W
81	450	500	440	60	Brass Mill	Geared	1918	Michigan Copper & Brass Co.	Detroit, Mich.	W
82	450	550-750	230	d.c.	Zinc Rolls	Coupled	1924	Mattheisen Hegeler Zinc Co.	LaSalle, Ill.	CW
83	450	550-750	230	d.c.	Zinc Strip Mills	Geared	1925	Mattheisen & Hegeler Zinc Co.	LaSalle, Ill.	CW
84	450	600	550	60	Copper Rod Mill	Geared	1920	Phillips Wire Co.	Pawtucket, R. I.	GE
85	450	870	440	60	Copper Clad Mill	Geared	1915	Duplex Metal Co.	Philadelphia, Pa.	W
86	500	120	2200	60	Copper Rod Mill	Direct	1927	Washburn Wire Co.	Phillipsdale, R. I.	AC
87	500	0-200	500	d.c.	78" Rev. Brass Plate Mill	Geared	1920	West Virginia Metal Products Co.	Fairmont, W. Va.	W
88	500	220-400	550	d.c.	Brass Mill	Geared	1913	Scoville Manufacturing Co.	Waterbury, Conn.	W
89	500	220-400	550	d.c.	Brass Mill	Geared	1913	Scoville Manufacturing Co.	Waterbury, Conn.	W
90	500	220-400	550	d.c.	Brass Mill	Geared	1913	Scoville Manufacturing Co.	Waterbury, Conn.	W
91	500	220-400	550	d.c.	Brass Mill	Geared	1913	Scoville Manufacturing Co.	Waterbury, Conn.	W
92	500	220-400	500	d.c.	Brass Mill	Geared	1913	Scoville Manufacturing Co.	Waterbury, Conn.	W
93	500	290	2200	25	Brass Mill	Geared	1920	American Brass Company	Buffalo, N. Y.	W
94	500	360	2200	60	Tube Mill	Geared	1915	American Brass Company	Waterbury, Conn.	GE
95	500	360	2200	60	Copper Mill	Geared	1917	Anaconda Copper Mining Co.	Black Eagle, Mont.	GE
96	500	360	440	60	Brass Mill	Direct	1923	Rome Brass & Copper Co.	Rome, N. Y.	GE
97	500	360	440	60	Brass Mill	Direct	1923	Rome Brass & Copper Co.	Rome, N. Y.	GE
98	500	360-612	600	d.c.	Reversing Hot Mill	Geared	1925	Michigan Copper & Brass Co.	Detroit, Mich.	GE
99	500	365	440	25	Copper Rolling Mill	Rope	1922	Baltimore Cop. Smelt. & Roll. Co.	Baltimore, Md.	W
100	500	368	2200	25	Brass Mill	Geared	1920	American Brass Company	Buffalo, N. Y.	W
101	500	375	2300	25		Geared	1925	Buffalo Copper & Brass Co.	Buffalo, N. Y.	AC
102	500	375	2200	25	10" Aluminum Rod Mill	Geared	1926	U. S. Aluminum Co.	Massena, N. Y.	GE
103	500	375-750	440	25	Copper Sheet Mill	Geared	1928	American Smelting & Refining Co.	Baltimore, Md.	GE
104	500	400-800	230	d.c.	14" Tandem Copper Mill	Geared	1927	Rome Brass & Copper Co.	Rome, N. Y.	GE
105	500	400-800	230	d.c.	14" Tandem Copper Mill	Geared	1927	Rome Brass & Copper Co.	Rome, N. Y.	GE
106	500	440	2200	60	Copper Rod Mill	Geared	1923	American Brass Company	Kenosha, Wis.	W
107	500	450	2200	60	Brass Mill	Geared	1915	Scoville Manufacturing Co.	Waterbury, Conn.	GE
108	500	450	2200	60	Brass Mill	Geared	1915	Scoville Manufacturing Co.	Waterbury, Conn.	GE
109	500	450	2200	60	Brass Mill	Geared	1915	Scoville Manufacturing Co.	Waterbury, Conn.	GE
110	500	450	2200	60	Brass Mill	Geared	1915	Chase Metal Works	Waterbury, Conn.	GE
111	500	450	440	60	20" Copper Mill	Geared	1916	Waclark Wire Co.	Elizabeth, N. J.	GE
112	500	450	2200	60	Copper Mill	Geared	1917	Anaconda Copper Mining Co.	Black Eagle, Mont.	GE
113	500	450	2200	60	Copper Mill	Geared	1917	Anaconda Copper Mining Co.	Black Eagle, Mont.	GE
114	500	450	2200	60	Brass Mill	Geared	1917	American Brass Company	Waterbury, Conn.	GE
115	500	450	2200	50	Brass Mill	Geared	1917	American Brass Company	Waterbury, Conn.	GE
116	500	450	440	60	Brass Sheet Mill	Geared	1920	Detroit Copper & Brass Co.	Detroit, Mich.	GE
117	500	450	2200	60	Brass Mill	Geared	1921	American Brass Company	Torrington, Conn.	GE
118	300	450	2200	60	Brass Mill	Geared	1921	American Brass Company	Torrington, Conn.	GE
119	500	450	2200	60	14" Roughing Mill	Geared	1920	International Nickel Co.	Huntington, W. Va.	AC
120	500	450	2200	60	9" Finishing Mill	Geared	1920	International Nickel Co.	Huntington, W. Va.	AC
121	500	450	440	60	20" Copper Mill	Coupled	1918	Waclark Wire Company	Bayway, N. J.	CW
122	500	450	2200	60	Copper Mill	Direct	1925	Anaconda Copper Mining Co.	Black Eagle, Mont.	GE
123	500	450	2300	60	Brass Mill	Geared	1928	Chase Companies, Inc.	Waterville, Conn.	GE
124	500	500	2200	25	Aluminum Mill	Geared	1928	U. S. Aluminum Co.	Massena, N. Y.	GE
125	500	500	2200	25	Experiment al Alum.	Geared	1925	U. S. A minum Co.	Massena, N. Y.	GE
126	500	514	550	60	18" Copper Mill	Geared	1919	American Brass Co.	Hastings, N. Y.	GE
127	500	514	2200	60	Brass Mill	Geared	1922	Western Cartridge Co.	East Alton, Ill.	GE
128	500	575	2200	60	Copper Rod Mill	Geared	1923	American Brass Company	Kenosha, Wis.	W
129	500	600	2200	60	Brass Mill	Geared	1917	American Brass Company	Waterbury, Conn.	GE
130	500	600	2200	60	Brass Mill	Geared	1917	American Brass Company	Waterbury, Conn.	GE
131	500	600	2200	60	Brass Mill	Geared	1917	American Brass Company	Torrington, Conn.	GE
132	500	600	2200	60	Copper Rod Mill	Geared	1922	E. F. Phillips Electrical Works, Ltd.	Montreal, Que.	W
133	500	600	2200	60	Copper Rolling Mill	Geared	1923	American Brass Company	Torrington, Conn.	GE
134	500	600	440	60	Aluminum Mill	Geared	1922	Aluminum Goods Mfg. Co.	Manitowoc, Wis.	GE
135	600	90	440	60	Brass & Nickel Silver Rolling Mill	Direct	1928	Waterbury Rolling Mills	Waterbury, Conn.	EM
136	600	300	440	25	Tandem Plate Mill	Rope	1920	Baltimore Copper S. & R. Co.	Baltimore, Md.	AC
137	600	300	440	25	Tandem Plate Mill	Rope	1920	Baltimore Copper S. & R. Co.	Baltimore, Md.	AC
138	600	300	550	60	Copper Rod Mill	Direct	1926	American Brass Co.	Ansonia, Conn.	GE
139	600	360-400	500	d.c.	Aluminum Mill	Geared	1919	U. S. Aluminum Co.	Marysville, Tenn.	W
140	600	360-440	500	d.c.	Aluminum Mill	Geared	1919	U. S. Aluminum Co.	Marysville, Tenn.	W
141	600	360-440	500	d.c.	Aluminum Mill	Geared	1919	U. S. Aluminum Co.	Marysville, Tenn.	W
142	600	360	440	60	Copper Mills	Geared	1923	Am. Insulated Wire & Cable Co.	Chicago, Ill.	GE
143	600	360	550	60	Copper Rod Mill	Direct	1926	American Brass Co.	Ansonia, Conn.	GE
144	600	450	2200	60	Aluminum Strip Mill	Geared	1914	Cleveland Metal Products Co.	Cleveland, Ohio	GE
145	600	500	575	25	Brass Sheet Mill	Geared	1920	Baltimore Tube Co.	Baltimore, Md.	GE
146	600	500	575	25	Brass Sheet Mill	Geared	1920	Baltimore Tube Co.	Baltimore, Md.	GE
147	600	514	2200	60	Brass Mill	Geared	1922	Western Cartridge Co.	East Alton, Ill.	GE
148	600	514	440	60	Aluminum Mill	Geared	1922	Aluminum Goods Mfg. Co.	Manitowoc, Wis.	GE
149	600	600	4000	60	Brass Mill	Geared	1919	Bristol Brass Co.	Bristol, Conn.	GE
150	600	600	2200	60	Copper Mill	Geared	1920	American Brass Co.	Waterbury, Conn.	GE
151	600	600	2200	60	Brass Mill	Geared	1921	American Brass Company	Waterbury, Conn.	GE
152	600	600	550	60	Copper Rod Mill	Geared	1925	Phillips Wire Co.	Pawtucket, R. I.	GE
153	600	900	440	60	Copper Rod Mill	Geared	1920	Western Electric Co.	Hawthorne, Ill.	GE
154	600	900	550	60	Brass Mill	Geared	1920	American Brass Company	Ansonia, Conn.	GE
155	600	900	440	60	Copper Mill	Geared	1923	Am. Insulated Wire & Cable Co.	Chicago, Ill.	GE
156	700	360	440	60	Brass Mill	Chain		Detroit Copper & Brass Co.	Detroit, Mich.	AC
157	700	585	2200	60	Copper Rod Mill	Geared	1923	Eugene F. Phillips Elec.Works,Ltd.	Montreal, Que.	W
158	700	735	440	25	Copper Rolling Mill	Geared	1924	Baltimore Cop. Smelt. & Roll. Co.	Baltimore, Md.	W
159	700	735	440	25	Copper Rolling Mill	Geared	1924	Baltimore Cop. Smelt. & Roll. Co.	Baltimore, Md.	W
160	700	735	440	25	Copper Rolling Mill	Geared	1924	Baltimore Cop. Smelt. & Roll. Co.	Baltimore, Md.	W
161	750	353	4600	60	Brass Mill	Geared	1924	Scoville Manufacturing Co.	Waterbury, Conn.	W
162	750	375	2200	25	10" Aluminum Rod Mill	Geared	1926	U. S. Aluminum Co.	Massena, N. Y.	GE
163	750	514	550	60	10" and 9" Copper Mills	Geared	1919	American Brass Company	Hastings, N. Y.	GE
164	750	514	550	60	10" and 9" Copper Mills	Geared	1919	American Brass Company	Hastings, N. Y.	GE
165	750	600	4000	60	Brass Mill	Geared	1919	Bristol Brass Co.	Bristol, Conn.	GE
166	750	720	2200	60	Zinc Rolling Mill	Geared	1923	American Zinc Products Co.	Greencastle, Ind.	GE
167	750	720	550	60	Brass Rolling Mill	Geared	1925	American Brass Co.	Ansonia, Conn.	GE
168	800	350	2200	60	Aluminum Mill	Geared	1915	U. S. Aluminum Co.	Edgewater, N. J.	W
169	800	353	440	50	8" Copper Rod Mill	Direct	1923	Standard Underground Cable Co.	St. Louis, Mo.	W
170	800	360-440	500	d.c.	Aluminum Mill	Geared	1919	U. S. Aluminum Co.	Marysville, Tenn.	W
171	800	360-440	500	d.c.	Aluminum Mill	Geared	1919	U. S. Aluminum Co.	Marysville, Tenn.	W
172	800	370	650	d.c.	Aluminum Mill	Direct	1917	U. S. Aluminum Co.	Niagara Falls, N. Y.	W
173	800	370-400	650	d.c.	Aluminum Mill	Direct	1919	U. S. Aluminum Co.	Niagara Falls, N. Y.	W
174	800	443	2200	60	Roughing Mill	Coupled	1920	International Nickel Co.	Huntington, W. Va.	AC
175	800	443	2200	60	Copper Mill	Geared	1928	American Brass Co.	Kenosha, Wis.	AC
176	800	450	2200	60	14" Merchant Mill	Geared	1920	International Nickel Co.	Huntington, W. Va.	AC
177	800-400	450-225	2200	60	Copper Mill	Direct	1925	Anaconda Copper Mining Co.	Mont.	GE
178	800	720	4600	60	Rolling Mill	Geared	1925	Michigan Copper & Brass Co.	Detroit, Mich.	AC

ALUMINUM, BRASS, COPPER AND NON-FERROUS MILL DRIVES—Continued

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
179	800	720	4600	60	Rolling Mill	Geared	1925	Michigan Copper & Brass Co.	Detroit, Mich.	AC
180	800	720	4600	60	Rolling Mill	Geared	1925	Michigan Copper & Brass Co.	Detroit, Mich.	AC
181	800	720	4600	60	Rolling Mill	Geared	1925	Michigan Copper & Brass Co.	Detroit, Mich.	AC
182	800	720	4600	60	Rolling Mill	Geared	1925	Michigan Copper & Brass Co.	Detroit, Mich.	AC
183	800	870	2200	60	Copper Rod Mill	Geared	1923	American Brass Company	Kenosha, Wis.	W
184	800	870	3200	60	Copper Rod Mill	Geared	1923	American Brass Company	Kenosha, Wis.	W
185	800	900	440	60	Copper Rod Mill	Geared	1920	Western Electric Co.	Hawthorne, Ill.	GE
186	900	900	440	60	Copper Rod Mill	Geared	1920	Western Electric Co.	Hawthorne, Ill.	GE
187	1000	40-60	270	d.c.	28″ Rev. Copper Mill	Direct	1927	Rome Brass & Copper Co.	Rome, N. Y.	GE
188	1000	300	2200	25	Aluminum Rod Mill	Geared	1922	U. S. Aluminum Co.	Massena, N. Y.	GE
189	1000	450	2200	60	20″ Merchant Mill	Geared	1920	International Nickel Co.	Huntington, W. Va.	AC
190	1000	600	2300	50	Copper Mill	Geared	1925	American Copper Products Co.	Elizabeth, N. J.	GE
191	1200	360	2200	60	24″ Bar Mill	Geared	1920	International Nickel Co.	Huntington, W. Va.	AC
192	1200	360	2200	60	30″ Sheet Mill	Geared	1920	International Nickel Co.	Huntington, W. Va.	AC
193	1200	375	440	25	Brass & Copper Mill	Geared	1928	American Smelting & Refining Co.	Baltimore, Md.	GE
194	1200	400	650	d.c.	Aluminum Plate Mill	Geared	1915	Aluminum Company of America	Niagara Falls, N. Y.	GE
195	1350	600	2300	60	Copper Mill	Geared	1918	American Brass Company	Waterbury, Conn.	GE

BAR AND BILLET MILL DRIVES

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1	300	250	440	25	Cogging Mill	Geared	1910	Simonds Mfg. Co.	Lockport, N. Y.	GE
2	300	375	2200	25	Bar Mill	Coupled		Bethlehem Steel Co.	Johnstown, Pa.	AC
3	300	375	2200	25	10″ Bar Mill	Geared	1919	Hammond Steel Co.	Solvay, N. Y.	GE
4	300	400	550	60	14″ Bar Mill	Geared	1926	Ludlum Steel Co.	Watervliet, N. Y.	GE
5	300	450	230	d.c.	Bar Mill	Geared	1916	Carbon Steel Co.	Pittsburgh, Pa.	W
6	300	450	550	60	Bar Mill	Coupled	1921	Nat'l Conduit & Cable Co.	Hast. on Hudson, N.Y	AC
7	300	514	2200	60	Bar Mill	Geared	1915	C. G. Hussey	Pittsburgh, Pa.	AC
8	300-300-150	600-400-300	440	60	Bar Mill	Chain	1916	Vulcan Crucible Steel Co.	Aliquippa, Pa.	GE
9	300	600	2300	60	12″ Billet Mill	Geared	1916	Tenn. Coal, Iron & R. R. Co.	Bessemer, Ala.	GE
10	300	720	440	60	Bar Mill	Geared	1920	Hoskins Mfg. Co.,	Detroit, Mich.	AC
11	300	750	2200	25	10″ Bar Mill	Geared	1923	Bethlehem Steel Co.	Lebanon, Pa.	GE
12	335	360	2200	60	Bar Mill	Geared	1915	Heppenstall Forge & Knife Co.	Pittsburgh, Pa.	GE
13	350	125	6600	25	12″ Bar Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
14	350-350	360-240	440	60	Bar Mill	Coupled	1921	Simmons Mfg. Co.	Kenosha, Wis.	AC
15	350	600	2200	60	Bar Mill	Belted	1920	Joslyn Mfg. Co.	Chicago, Ill.	AC
16	400-400	107-64	2200	25	16″ Bar Mill	Direct	1914	Bethlehem Steel Co.	Lebanon, Pa.	GE
17	400	400	400	60	Bar Mill	Chain	1918	Latrobe Steel Co.	Latrobe, Pa.	AC
18	400	440	4000	60	Billet Mill	Coupled	1923	Bryden Neverslip Co.	Catasauqua, Pa.	AC
19	400	450	2200	60	12″ Bar Mill	Geared	1924	Atchison, Topeka & Santa Fe Ry.	Chicago, Ill.	AC
20	400	450	2200	60	9″ Bar Mill	Geared	1924	Atchison, Topeka & Santa Fe Ry.	Chicago, Ill.	AC
21	400	514	2200	60	Bar Mill	Geared	1919	Judson Mfg. Co.	Oakland, Calif.	AC
22	400-225	600-300	550	40	Bar Mill	Geared	1909	Ludlum Steel Co.	Watervliet, N. Y.	GE
23	400	705	2200	60	16″ Cogging Mill	Geared	1923	Crucible Steel Co. of America	Park Works, Pgh., Pa	W
24	400	720-450	2200	60	Bar Mill	Geared	1917	Cyclops Steel Co.	Titusville, Pa.	AC
25	400-265	875-585	2200	60	Bar Mill	Geared	1913	Old Dominion Iron & Nail Co.	Richmond, Va.	W
26	400	900	2200	60	Bar and Billet Mill	Geared	1925	Crucible Steel Co.	Pittsburgh, Pa.	W
27	450	125	6600	25	12″ Bar Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
28	500	175-350	600	d.c.	12″ Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
29	500	175-350	600	d.c.	12″ Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
30	500	175-350	600	d.c.	12″ Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
31	500	250	440	25	10″ Bar Mill	Geared	1917	Simonds Mfg. Co.	Lockport, N. Y.	GE
32	500	300	2200	60	Bar Mill	Coupled	1920	Ft. Wayne Rolling Mill Co.	Ft. Wayne, Ind.	AC
33	500	360	2200	60	16″ Bar Mill	Geared	1915	Tenn. Coal, Iron & R. R. Co.	Bessemer, Ala.	GE
34	500	440	2200	60	Bar Mill	Geared	1924	Universal Steel Co.	Bridgeville, Pa.	AC
35	500	440	4000	60	Bar Mill	Coupled	1923	Bryden Neverslip Co	Catasauqua, Pa.	AC
36	500	440	440	60	16″ Bar Mill	Chain	1928	Phoenix Horseshoe Co.	Joliet, Ill.	W
37	500	450	440	60	Bar Mill	Geared	1910	Chase Rolling Mills Co.	Waterbury, Conn.	GE
38	500	450	440	60	Bar Mill	Geared	1910	Chase Rolling Mills Co.	Waterbury, Conn.	GE
39	500	450	440	60	16″ Bar Mill	Geared	1914	Carbon Steel Co.	Pittsburgh, Pa.	GE
40	500	450	2200	60	Billet Mill	Geared	1915	International High Speed Steel Co	Rockaway, N. J.	GE
41	500	450	2200	60	Bar Mill	Geared	1925	Indianapolis Steel Products Co.	Indianapolis, Ind.	AC
42	500	500	2200	25	16″ Bar Mill	Geared	1919	Hammond Steel Co.	Solvay, N. Y.	GE
43	500	514	2200	60	Bar Mill	Rope	1917	Henry Disston & Son	Philadelphia, Pa.	AC
44	500	514	2200	60	Bar Mill	Geared	1920	Metals Production Equip. Co.	Springfield, Mass.	AC
45	500	514	2200	60	Bar Mill	Geared	1920	Metals Production Equip. Co.	Springfield, Mass.	AC
46	500	514	2200	60	Bar Mill	Geared	1920	Metals Production Equip. Co.	Springfield, Mass.	AC
47	500	514	440	60	Bar Mill	Chain	1915	Simmons Mfg. Co.	Kenosha, Wis.	AC
48	500	514	2200	60	Bar Mill	Geared	1919	Judson Mfg. Co.	Oakland, Calif.	AC
49	500	600	2200	60	Bar Mill	Belted	1919	Joslyn Mfg. Co.	Chicago, Ill.	AC
50	600	171	440	40	Bar Mill	Geared	1910	Ludlum Steel Co.	Watervliet, N. Y.	GE
51	600	300	2200	25	Muck Mill	Chain	1914	St. Louis Screw Co.	St. Louis, Mo.	AC
						Coupled	1914			
52	600-600	300-214	2200	25	Bar Mill	& Rope	1914	St. Louis Screw Co.	St. Louis, Mo.	AC
53	600	300-214	2200	25	Bar Mill	Chain		St. Louis Screw Co.	St. Louis, Mo.	AC
54	600	300-330	250	d.c.	10″ Bar Mill	Coupled	1921	Universal Steel Company	Bridgeville, Pa.	CW
55	600	368	6600	25	18-21″ Bar (Rough.) Mill	Geared	1924	Pittsburgh Crucible Steel Co.	Midland, Pa.	GE
56	600	490	2200	25	16″ Bar (Roughing) Mill	Geared	1919	Scullin Steel Co.	St. Louis, Mo.	W
57	600	514	2200	60	18″ Bar Mill	Geared	1926	American Nickel Corp.	Hyde, Pa.	GE
58	600-300	600-300	550	60	9″ Bar Mill No. 2	Geared	1926	Ludlum Steel Co.	Watervliet, N. Y.	GE
59	700	250	2200	25	18″ Bar Mill	Rope	1911	Dilworth Porter Co.	Pittsburgh, Pa.	GE
60	700	390	2200	60	18″ Bar Mill	Geared	1922	Dilworth Porter Co.	Pittsburgh, Pa.	W
61	700	600	2200	60	14″ Bar Mill	Coupled	1921	Universal Steel Company	Bridgeville, Pa.	CW
62	750	120-210	250	d.c.	14″ Bar Mill	Coupled	1923	Pittsburgh Crucible Steel Co.	Midland, Pa.	AC
63	750	120-210	250	d.c.	14″ Bar Mill	Coupled	1923	Pittsburgh Crucible Steel Co.	Midland, Pa.	AC
64	750-750	225-168	440	60	Bar Mill	Coupled	1921	Simmons Mfg. Co.	Kenosha, Wis.	AC
65	750	250	2200	25	Bar Mill	Geared	1914	Bethlehem Steel Co.	Johnstown, Pa.	AC
66	750	250	440	25	Bar Mill	Coupled	1920	Simonds Mfg. Co.	Lockport, N. Y.	AC
67	800	175-350	600	d.c.	12″ Alloy Bar Mill	Direct	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
68	800	175-350	600	d.c.	12″ Alloy Bar Mill	Direct	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
69	800	175-350	600	d.c.	12″ Alloy Bar Mill	Direct	1927	Illinois Steel Co.	S. Chicago, Ill.	GE
70	800	220-150	2200	25	12″ Bar (Finishing) Mill	Direct	1919	Scullin Steel Co.	St. Louis, Mo.	W
71	800	220-440	600	d.c.	12″ Alloy Bar Mill	Direct	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
72	800	220-440	600	d.c.	12″ Alloy Bar Mill	Direct	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
73	800	220-440	600	d.c.	12″ Alloy Bar Mill	Direct	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
74	800	250	2200	60	22″ Bar Mill	Rope	1915	Timken Roller Bearing Co.	Canton, Ohio	W
75	800	257	2200	60	Bar Mill	Geared	1914	Standard Seamless Tube Co.	Economy, Pa.	GE
76	800	277	2200	60	Bar Mill	Geared	1918	Pacific Coast Steel Co.	San Francisco, Calif.	AC
77	800	292	2200	25	18″ Tandem Billet Mill	Direct	1912	Laclede Steel Co.	Alton, Ill.	W
78	800	350	2200	60	Billet Mill	Geared	1915	Milton Manufacturing Co.	Milton, Pa.	W

BAR AND BILLET MILL DRIVES—Continued

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
79	800	514	2200	60	Bar Mill	Geared	1919	Judson Mfg. Co.	Oakland, Calif.	AC
80	800–400	360–180	550	40	Bar Mill	Geared	1926	Ludlum Steel Co.	Watervliet, N. Y.	GE
81	800–400	360–180	550	40	Bar Mill	Geared	1926	Ludlum Steel Co.	Watervliet, N. Y.	GE
82	800–400	360–180	550	60	Bar Mi	Geared	1926	Ludlum Steel Co.	Watervliet, N. Y.	GE
83	800–400	360–180	550	60	Bar Mill	Geared	1926	Ludlum Steel Co.	Watervliet, N. Y.	GE
84	800	730–365	2200	50	22″ Bar Mill	Geared	1916	Columbia Steel Co.	Los Angeles, Cal.	W
85	800	880–490	2200	60	16″ Bar Mill	Geared	1920	Knoxville Iron Co.	Knoxville, Tenn.	W
86	850	505	2200	60	24″ Bar (Roughing) Mill	Geared	1919	Central Steel Co.	Massillon, Ohio	W
87	1000–400	257–128	550	60	9″ Bar Mill No. 1	Geared	1926	Ludlum Steel Co.	Watervliet, N. Y.	GE
88	1000	277	2200	60	22″ Bar Mill	Geared	1919	Pennsylvania Forge Co.	Philadelphia, Pa.	GE
89	1000	350–700	600	d.c.	12″ Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
90	1000	292	6600	25	9″ Bar Mill	Direct	1928	Bethlehem Steel Co.	Johnstown, Pa.	W
91	1000	350–700	600	d.c.	12″ Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chidcago, Ill.	GE
92	1000	350–700	600	d.c.	12″ Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
93	1000	350–700	600	d.c.	12″ Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
94	1000	350–700	600	d.c.	12″ Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
95	1000	375	2200	25	Bar Mill	Geared	1913	Bethlehem Steel Co.	Johnstown, Pa.	AC
96	1000	450	2200	60	Bar Mill	Rope	1919	Pacific Coast Steel Co.	Seattle, Wash.	AC
97	1000	710	2200	60	20″ Special Bar	Geared	1925	Rail Joint Company	Troy, N. Y.	W
98	1000	710	2200	60	20″ Special Bar	Geared	1925	Rail Joint Company	Troy, N. Y.	W
99	1200 1000–800	150–375–300	6600	25	18″ Bar Mill, No. 16	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
100	1200	505	2200	60	Bar (Roughing) Mill	Geared	1922	Youngstown Steel Co.	Youngstown, Ohio	W
101	1200	514	2200	60	Bar Mill	Geared	1917	Elyria Iron & Steel Co.	Elyria, Ohio	AC
102	1250	375	2080	25	18″ Billet Mill	Geared	1918	Wickwire Spencer Steel Co.	Buffalo, N. Y.	GE
103	1250	375	2080	25	18″ Billet Mill	Geared	1918	Wickwire Spencer Steel Co.	Buffalo, N. Y.	GE
104	1400	505	2200	60	14″ Billet Mill	Geared	1917	Wickwire Spencer Steel Corp.	Palmer, Mass.	W
105	1500	182–162	6600	25	10″ Bar Mill	Direct	1913	Carnegie Steel Co.	Duquesne, Pa.	W
106	1500	266	6400	25	Billet Mill	Geared	1916	American Steel & Wire Co.	Cleveland, Ohio	W
107	1500	270	2200	60	22″ Bar and Billet Mill	Geared	1918	Central Steel Co.	Massillon, Ohio	W
108	1500	440	2200	60	22″ Bar Mill	Geared	1919	Kansas Bolt & Nut Co.	Kansas City, Mo.	W
109	1500	450	2200	60	Bar Mill	Rope	1919	Pacific Coast Steel Co.	Seattle, Wash.	AC
110	1500	450	2200	60	Roughing Mill	Geared	1919	Pacific Coast Steel Co.	San Francisco, Calif.	AC
111	1500	705	2200	60	24″ Bar (Finishing) Mill	Geared	1922	Youngstown Steel Co.	Youngstown, Ohio	W
112	1500	705	2200	60	22″ Bar Mill	Geared	1924	Atchison, Topeka & Santa Fe Ry.		AC
113	1500	735	2200	25	Bar Mill	Geared	1923	Scullin Steel Co.	St. Louis, Mo.	AC
114	1600	150	6600	25	Bar Mill	Direct	1912	Pittsburgh Crucible Steel Co.	Pittsburgh, Pa.	GE
115	1600	257	2200	60	14″ Cont. Billet Mill	Geared	1912	Atlantic Steel Co.	Atlanta, Ga.	GE
116	1650–1500–1350	413–375–337	6600	25	10″ Bar Mill, No. 10	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
117	1750	70–120	600	d.c.	29″ Reversing Billet Mill	Direct	1916	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	W
118	1800	75	6600	25	30″ Billet Mill	Direct	1914	Bethlehem Steel Co.	Bethlehem, Pa.	GE
119	1800	366	2200	25	22″ Billet and Struct. Mill	Geared	1919	Scullin Steel Co.	St. Louis, Mo.	W
120	1800–1800–1800	370–300–247	6600	60	Sheet Bar Mill	Geared	1920	American Rolling Mill Co.	Ashland, Ky.	GE
121	1850–1450– 925	120– 94– 60	6600	25	16″ Hand Bar Mill	Direct	1921	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
122	2000	50–100	600	d.c.	30″ Reversing Bar Mill	Direct	1919	Follansbee Brothers Co.	Toronto, Ohio	W
123	2000	214	6600	25	40″ Billet Mill	Geared	1907	Illinois Steel Co.	Gary, Ind.	GE
124	2000	214	6600	25	40″ Billet Mill	Geared	1907	Illinois Steel Co.	Gary, Ind.	GE
125	2000	240	2200	60	18″ Sheet Bar Mill	Geared	1920	Nat. Enameling & Stamping Co.	Granite City, Ill.	GE
126	2000	250–465	240	d.c.	22″ Bar Mill	Geared	1928	Timken Roller Bearing Co.	Canton, Ohio	GE
127	2000	295	2200	60	Billet Mill	Geared	1928	J. A. Roebling Sons Co.	Trenton, N. J.	W
128	2150	50–100	535	d.c.	Reversing Bar Mill	Direct	1926	Standard Seamless Tube Co.	Economy, Pa.	GE
129	2200–2000–1800	275–250–225	6600	25	10″ Bar Mill, No. 15	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
130	2200	505–303	2200	60	18″ Bar (Finishing) Mill	Geared	1919	Central Steel Co.	Massillon, Ohio	W
131	2400	505	2200	60	22″ Bar Mill	Geared	1926	Pacific Coast Steel Co.	Seattle, Wash.	W
132	2500	80	2200	60	Bar Mill	Direct	1928	Interstate Iron & Steel Co.	Chicago, Ill.	AC
133	2500	150	6600	25	28″ Billet Mill	Geared	1923	Pittsburgh Crucible Steel Co.	Midland, Pa.	GE
134	2500	240	2200	60	24″ Sheet Bar Mill	Geared	1920	Mansfield Sheet & Tin Plate Co.	Mansfield, Ohio	GE
135	2500	295	2200	60	18″ Cont. Billett Mill	Geared	1926	American Steel & Wire Co.	Worcester, Mass.	AC
136	2500	500	2200	60	22″ Bar Mill	Geared	1923	Phoenix Iron Co.	Phoenixville, Pa.	W
137	2750–2500–2250	275–250–225	6600	25	14″ Bar Mill, No. 14	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
138	3000	70–150	750	d.c.	24″ Bar Mill	Direct	1925	Inland Steel Co.	Indiana Harbor, Ind.	GE
139	3000	70–175	750	d.c.	24″ Bar Mill	Direct	1927	Inland Steel Corp.	Ind. Harbor, Ind.	GE
140	3000	250	6600	25	18″ Cont. Billet Mill	Geared	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
141	3000	375	2200	25	18″ Billet Mill	Geared	1916	Donner Steel Co.	Buffalo, N. Y.	GE
142	3000	375	6600	25	24″ Sheet Bar Mill	Geared	1922	Otis Steel Co.	Cleveland, Ohio	GE
143	3250	94	6600	25	18″ Sheet Bar Mill	Direct	1916	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
144	3500	92	2200	60	18″ Sheet Bar Mill	Direct	1916	Trumbull Steel Co.	Warren, Ohio	GE
145	3500	92	2200	60	21″ Sheet Bar Mill	Direct	1918	Trumbull Steel Co.	Warren, Ohio	GE
146	3500	390	2200	60	Continuous Billet Mill	Geared	1920	Steel Co. of Canada	Hamilton, Ont.	W
147	4000	83	6600	25	24″ Cont. Billet Mill	Direct	1916	Bethlehem Steel Co.	Sparrows Pt., Md.	GE
148	4000	93	6600	60	18″ Continuous Bar Mill	Direct	1919	Weirton Steel Co.	Weirton, W. Va.	W
149	4000	93	6600	60	21″ Continuous Bar Mill	Direct	1919	Weirton Steel Co.	Weirton, W. Va.	W
150	4000	360	2200	60	21″ Sheet Bar Mill	Geared	1917	Sharon Steel Hoop Co.	Lowellville, Ohio	GE
151	4000	450	2200	60	24″ Cont. Billet Mill	Geared	1927	Carnegie Steel Co.	Farrell, Pa.	W
152	4200	93	2200	60	Continuous Bar Mill	Direct	1915	United Alloy Steel Corporation	Canton, Ohio	W
153	5000	82	2200	60	21″ Cont. Bar & Billet Mill	Direct	1928	Columbia Steel Co.	Pittsburgh, Cal.	W
155	5000	82	2200	60	21″ Cont. Bar & Billet Mill	Direct	1928	Columbia Steel Co.	Pittsburgh, Cal.	W
156	5000	99	13200	60	18″ Billet Mill	Direct	1925	Ford Motor Company	Detroit, Mich.	W
157	5000	450	2300	60	18″ Cont. Sheet Bar & Billet Mill	Geared	1919	Wheeling Steel Corp.	Portsmouth, Ohio	GE
158	5000	514	6600	60	18″ Billet Mill	Geared	1928	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
159	5000	594	6600	60	Sheet and Billet Mill	Geared	1924	Tenn. Coal, Iron & R. R. Co.	Birmingham, Ala.	GE
160	5750	94	6600	25	21″ Cont. Billet Mill	Direct	1914	McKinney Steel Co.	Cleveland, Ohio	GE
161	5750	94	6600	25	18″ Bar Mill	Direct	1915	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
162	5750	94	6600	25	21″ Bar Mill	Direct	1921	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
163	5750	94	6600	25	18″ Billet Mill	Geared	1923	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
164	5750	94	6600	25	21″ Billet Mill	Geared	1923	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
165	6000	83	6600	25	32″ Billet Mill	Direct	1907	Illinois Steel Co.	Gary, Ind.	GE
166	6000	83	6600	25	24″ Billet Mill	Direct	1907	Illinois Steel Co.	Gary, Ind.	GE
167	6000	83	6600	25	18″ Billet Mill	Direct	1907	Illinois Steel Co.	Gary, Ind.	GE
168	6000	83	6600	25	18″ Sheet Bar Mill	Direct	1910	Illinois Steel Co.	Gary, Ind.	GE
169	6000	294	2200	60	Billet Mill	Geared	1927	Interstate Iron & Steel Co.	Chicago, Ill.	AC
170	6250	368	2200	25	24″ Cont. Billet Mill	Geared	1922	Inland Steel Co.	Indiana Harbor, Ind.	W
171	7500	375	2200	25	19″ Cont. Bar & Billet Mill	Geared	1926	Inland Steel Co.	Indiana Harbor, Ind.	W
172	9000	107	6600	25	Cont. Billet Bar Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	GE

COLD ROLL DRIVES

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1	300	300	230	d.c.	Cold Roll Mill	Geared	1914	Trumbull Steel Co.	Warren, Ohio	W
2	300	300	230	d.c.	Cold Roll Mill	Geared	1920	Alan Wood Iron & Steel Co.	Conshohocken, Pa.	W
3	300	340	2200	60	Cold Roll Mill	Geared	1921	Newton Steel Co.	Newton Falls, Ohio	W
4	300	350	2200	60	Cold Roll Mill	Geared	1915	Mansfield Sheet & Tin Plate Co.	Mansfield, Ohio	W
5	300	350	2200	60	Cold Roll Mill	Geared	1916	Wheeling Steel Corporation	Wheeling, W. Va.	W
6	300	350	2200	60	Cold Roll Mill	Geared	1916	Wheeling Steel Corporation	Portsmouth, Ohio	W
7	300	350	2200	60	Cold Roll Mill	Geared	1916	Wheeling Steel Corporation	Portsmouth, Ohio	W
8	300	350	2200	60	Cold Roll Mill	Geared	1916	Wheeling Steel Corporation	Portsmouth, Ohio	W
9	300	350	2200	60	Cold Roll Mill	Geared	1916	Wheeling Steel Corporation	Portsmouth, Ohio	W
10	300	352	2200	60	Cold Roll Mill	Direct	1923	Sharon Steel Hoop Co.	Youngstown, Ohio	W
11	300	353	2200	60	Cold Rolls	Geared	1923	Reeves Mfg. Co.	Dover, Ohio	GE
12	300	360	2200	60	Sheet Mill—Cold Rolls	Geared	1922	U. Alloy Steel Corp., Berger Div.	Canton, Ohio	GE
13	300	360	2300	60	Cold Rolls	Geared	1923	Ashtabula Steel Co.	Ashtabula, Ohio	GE
14	300	363	220	25	Cold Roll Mill	Geared	1919	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
15	300-300	400-800	230	d.c.	Cold Strip Mill	Geared	1913	Weirton Steel Co.	Weirton, W. Va.	GE
16	300-300	400-800	230	d.c.	Cold Strip Mill	Geared	1913	Weirton Steel Co.	Weirton, W. Va.	GE
17	300-300	400-800	230	d.c.	Cold Strip Mill	Geared	1913	Weirton Steel Co.	Weirton, W. Va.	GE
18	300-300	400-800	230	d.c.	Cold Strip Mill	Geared	1913	Weirton Steel Co.	Weirton, W. Va.	GE
19	300-300	400-800	230	d.c.	20x24" Cold Strip Mill	Geared	1919	Trumbull Steel Co.	Warren, Ohio	GE
20	300-300	400-800	230	d.c.	20x24" Cold Strip Mill	Geared	1919	Trumbull Steel Co.	Warren, Ohio	GE
21	300-300	400-800	230	d.c.	20x24" Cold Strip Mill	Geared	1919	Trumbull Steel Co.	Warren, Ohio	GE
22	300-300	400-800	230	d.c.	20x24" Cold Strip Mill	Geared	1919	Trumbull Steel Co.	Warren, Ohio	GE
23	300	440	2200	60	Cold Roll Mill	Geared	1924	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
24	300	440	2200	60	Cold Roll Mill	Geared	1924	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
25	300	485	2200	25	Cold Roll Mill	Direct	1916	Halcomb Steel Co.	Syracuse, N. Y.	W
26	300	514	550	60	14" Cold Strip Mill	Geared	1922	Wallingford Steel Co.	Wallingford, Conn.	GE
27	300	575	2200	60	Cold Roll Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
28	300	575	2200	60	Cold Roll Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
29	300	575	2200	60	Cold Roll Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
30	300	575	2200	60	Cold Roll Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
31	300	600	2200	60	Cold Sheet Mill Rolls	Geared	1923	Falcon Steel Co.	Niles, Ohio	GE
32	320	400-800	230	d.c.	Cold Strip Drive	Geared	1926	International Nickle Co.	Huntington, W. Va.	AC
33	350	145	2200	60	Cold Roll Mill	Rope	1912	Massillon Rolling Mill Co.	Massillon, Ohio	W
34	350	345	440	60	Cold Roll Mill	Geared	1910	Oliver Iron & Steel Co.	Wilson, Pa.	W
35	350	360	2200	60	Sheet Mill—Cold Rolls	Geared	1919	Falcon Steel Co.	Niles, Ohio	GE
36	375	430-860	230	d.c.	20" Cold Roll Mill	Geared	1922	Otis Steel Co.	Cleveland, Ohio	W
37	375	430-860	230	d.c.	20" Cold Roll Mill	Geared	1922	Otis Steel Co.	Cleveland, Ohio	W
38	375	430-860	230	d.c.	20" Cold Roll Mill	Geared	1922	Otis Steel Co.	Cleveland, Ohio	W
39	375	430-860	230	d.c.	20" Cold Roll Mill	Geared	1922	Otis Steel Co.	Cleveland, Ohio	W
40	375	430-860	230	d.c.	20" Cold Roll Mill	Geared	1922	Otis Steel Co.	Cleveland, Ohio	W
41	375	430-860	230	d.c.	Cold Strip Mill	Geared	1925	Otis Steel Co.	Cleveland, Ohio	GE
42	375	430-860	230	d.c.	Cold Strip Mill	Geared	1925	Otis Steel Co.	Cleveland, Ohio	GE
43	400	290	2200	60	Cold Roll Mill	Geared	1916	Youngstown Sheet & Tube Co.	Warren, Ohio	W
44	400	290	2200	60	Cold Roll Mill	Geared	1917	Liberty Steel Co.	Warren, Ohio	W
45	400	350	2200	60	Cold Roll Mill	Geared	1928	Newton Steel Co.	Newton Falls, Ohio	W
46	400	350	2200	60	Cold Roll Mill	Geared	1928	Newton Steel Co.	Newton Falls, Ohio	W
47	400	350	2200	60	Cold Roll Mill	Geared	1928	Newton Steel Co.	Newton Falls, Ohio	W
48	400	360	2200	60	Sheet Mill, Cold Rolls	Geared	1916	Mahoning Valley Steel Co.	Niles, Ohio	GE
49	400	360	2200	60	Sheet Mill, Cold Rolls	Geared	1916	Mahoning Valley Steel Co.	Niles, Ohio	GE
50	400	360	2200	60	Cold Roll Sheet Mill	Geared	1918	Reeves Mfg. Co.	Canal Dover, Ohio	GE
51	400	360	440	60	Cold Strip Mill	Geared	1921	Am. Tube and Stamping Co.	Bridgeport, Conn.	GE
52	400	400-800	230	d.c.	Cold Strip Mill	Geared	1926	Trumbull Steel Co.	Warren, Ohio	GE
53	400	400-800	230	d.c.	Cold Strip Mill	Geared	1927	Trumbull Steel Co.	Warren, Ohio	GE
54	400	400-800	230	d.c.	Cold Strip Mill	Geared	1927	Trumbull Steel Co.	Warren, Ohio	GE
55	400	400-800	230	d.c.	Cold Strip Mill	Geared	1927	Trumbull Steel Co.	Warren, Ohio	GE
56	400	400-800	230	d.c.	Cold Strip Mill	Geared	1927	Central Alloy Steel Co.	Massillon, Ohio	GE
57	400	400-800	230	d.c.	Cold Mill	Geared	1927	American Sheet & Tin Plate Co.	McKeesport, Pa.	GE
58	400	500-1000	600	d.c.	Cold Strip Mill	Geared	1926	Forged Steel Wheel Co.	Butler, Pa.	AC
59	400	500-1000	600	d.c.	Cold Strip Mill	Geared	1926	Forged Steel Wheel Co.	Butler, Pa.	AC
60	400	500-1000	600	d.c.	Cold Strip Mill	Geared	1926	Forged Steel Wheel Co.	Butler, Pa.	AC
61	400	500-1000	600	d.c.	Cold Strip Mill	Geared	1926	Forged Steel Wheel Co.	Butler, Pa.	AC
62	400	514	2200	60	Cold Mill	Geared	1927	American Rolling Mill Co.	Zanesville, Ohio	W
63	400	575	2200	60	Cold Roll Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
64	400	575	2200	60	Cold Roll Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
65	400	575	2200	60	Cold Roll Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
66	400	575	2200	60	Cold Roll Mill	Geared	1922	American Rolling Mill Co.	Ashland, Ky.	W
67	450	375	440	25	Cold Roll Mill	Geared	1925	Seneca Iron & Steel Co.	Blasdell, N. Y.	CW
68	450	514	550	60	14" Cold Strip MillP	Geared	1922	Wallingford Steel Co.	Wallingford, Conn.	GE
69	500	250	6600	25	Sheet Mill Cold Rolls	Geared	1919	Bethlehem Steel Co.	Sparrows Point, Md.	GE
70	500	240	2200	60	Cold Roll Mill	Geared	1928	Columbia Steel Corp.	Pittsburgh, Cal.	W
71	500	350	2200	60	Cold Roll Mill	Geared	1916	Mansfield Sheet & Tin Plate Co.	Mansfield, Ohio	W
72	500	350	440	60	Cold Roll Mill	Geared	1916	Andrews Steel Co.	Newport, Ky.	W
73	500	360	2200	50	Sheet Mill, Cold Rolls	Geared	1920	Central Steel Co.	Massillon, Ohio	GE
74	500	360	2200	60	Sheet Mill, Cold Rolls	Geared	1920	Central Steel Co.	Massillon, Ohio	GE
75	500	360	2200	60	Sheet Mill, Cold Rolls	Geared	1920	Republic Iron & Steel Co.	Youngstown, Ohio	GE
76	500	400-800	230	d.c.	Cold Strip Mill	Geared	1927	Newton Steel Co.	Newton Falls, Ohio	W
77	500	400-800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton, Steel Co.	Weirton, W. Va.	AC
78	500	400-800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
79	500	400-800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
80	500	400-800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
81	500	400-800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
82	500	400-800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
83	500	400-800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
84	500	400-800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
85	500	400-800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
86	500	400-800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
87	500	442	2200	60	Cold Roll Mill	Geared	1922	Follansbee Brothers Co.	Toronto, Ohio	W
88	500	450	550	60	12" Cold Roll Mill	Geared	1914	Worcester Pressed Steel Co.	Worcester, Mass.	GE
89	600	150	550	60	Sheet Mill, Cold Rolls	Rope	1909	Weirton Steel Co.	Weirton, W. Va.	GE
90	600	400-800	230	d.c.	Cold Strip Mill	Geared	1927	American Rolling Mill Co.	Ashland, Ky.	W
91	600	400-800	230	d.c.	Cold Strip Mill	Geared	1927	American Rolling Mill Co.	Ashland, Ky.	W
92	600	400-800	230	d.c.	Cold Strip Mill	Geared	1927	American Rolling Mill Co.	Ashland, Ky.	W
93	600	400-800	230	d.c.	Cold Strip Mill	Geared	1927	American Rolling Mill Co.	Ashland, Ky.	W
94	600	400-800	230	d.c.	Cold Strip Mill	Geared	1927	American Rolling Mill Co.	Ashland, Ky.	W
95	700	502	2200	60	Cold Roll Mill	Geared	1917	Carnahan Tin Plate & Sheet Co.	Canton, Ohio	W
96	750	100	2200	25	Tin Mill, Cold Rolls	Geared	1915	American Sheet & Tin Plate Co.	Gary, Ind.	GE
97	750	100	2200	25	Tin Mill, Cold Rolls	Geared	1915	American Sheet & Tin Plate Co.	Gary, Ind.	GE
98	750	125	2200	25	Tin Mill, Cold Rolls	Rope	1915	McKeesport Tin Plate Co.	McKeesport, Pa.	GE
99	750	125	2200	25	Tin Mill, Cold Rolls	Rope	1915	McKeesport Tin Plate Co.	McKeesport, Pa.	GE
100	750	240	2200	60	Sheet Mill, Cold Rolls	Geared	1919	Wheeling Steel Corp.	Steubenville, Ohio	GE
101	750	300-600	230	d.c.	Cold Rolling Mill	Geared	1924	International Nickel Co.	Huntington, W. Va.	AC
102	750	300-600	230	d.c.	Bliss Cold Roll Drive	Geared	1926	International Nickle Co.	Huntington, W. Va.	AC
103	800	375	2200	25	Sheet Mill, Cold Rolls	Geared	1919	Eastern Rolling Mills Co.	Baltimore, Md.	GE
104	1000	235	2200	60	Cold Tin Mill	Geared	1928	Columbia Steel Co.	Pittsburgh, Cal.	W
105	1200	367	2200	25	Cold Roll Mill	Geared	1916	Bethlehem Steel Co.	Sparrows Point, Md.	W

SHEET BAR AND SKELP MILL DRIVES

No.	Horse Power	R.P.M.	Voltage	Current	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1	350	500	230	d.c.	16″ Cont. Skelp Mill	Geared	1924	Gary Tube Co.	Gary, Ind.	AC
2	500	180–360	600	d.c.	14″-12″ Skelp Mill	Geared	1926	Wheeling Steel Corp.	Benwood, W. Va.	GE
3	550	575	2200	60	16″ Skelp Mill	Geared	1919	Tyler Tube & Pipe Co.	Washington, Pa.	W
4	800	350	2200	60	24″ Sheet Bar (B.H.) Mill	Geared	1915	Central Steel Co.	Massillon, Ohio	W
5	800	350–790	600	d.c.	13″ Skelp Mill	Geared	1928	National Tube Co.	McKeesport, Pa.	GE
6	800	350–790	600	d.c.	13″ Skelp Mill	Geared	1928	National Tube Co.	McKeesport, Pa.	GE
7	800	505	6600	60	Bar Plate Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
8	800	505	6600	60	Bar Plate Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
9	1000	125	230	d.c.	Sheet Bar Mill	Geared	1920	Allegheny Steel Co.	Brackenridge, Pa.	GE
10	1000	145–327	600	d.c.	13″ Skelp Mill	Direct	1928	National Tube Co.	McKeesport, Pa.	GE
11	1000	190–427	600	d.c.	13″ Skelp Mill	Direct	1928	National Tube Co.	McKeesport, Pa.	GE
12	1000	209	6600	25	14″ Cont. Skelp Mill	Coupled	1924	Gary Tube Co.	Gary, Ind.	AC
13	1000	293	6600	25	14″ Cont. Skelp Mi..	Geared	1924	Gary Tube Co.	Gary, Ind.	AC
14	1000	600	2200	60	16″ Skelp Mill	Geared	1923	Elyria Iron & Steel Co.	Elyria, Ohio	GE
15	1000	585	6600	60	Bar Plate Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
16	1200	705	6600	60	Bar Plate Mill	Geared	1927	American Rolling Mill	Middletown, Ohio	W
17	1100	214–320	600	d.c.	12″ Skelp Mill	Direct	1926	Bethlehem Steel Co.	Sparrows Point, Md.	W
18	1100	240–382	600	d.c.	12″ Skelp Mill	Direct	1926	Bethlehem Steel Co.	Sparrows Point, Md.	W
19	1250	294	6600	25	14″ Cont. Skelp Mill	Coupled	1924	Gary Tube Co.	Gary, Ind.	AC
20	1500	234	2200	60	26″ Sheet Bar Mill	Geared	1916	Canton Sheet Steel Co.	Canton, Ohio	W
21	1500	250–565	600	d.c.	13″ Skelp Mill	Direct	1928	National Tube Co.	McKeesport, Pa.	GE
22	1500	270	2200	60	24″ Sheet Bar Mill	Geared	1914	Central Steel Co.	Massillon, Ohio	W
23	1500	270	2200	60	22″ Sheet Bar, Billet Mill	Geared	1918	Central Steel Co.	Massillon, Ohio	W
24	1500	277	2200	60	22″ Skelp Mill	Direct	1924	Bethlehem Steel Corp.	Coatesville, Pa	GE
25	1500	315–630	600	d.c.	13″ Skelp Mill	Direct	1928	National Tube Co.	McKeesport, Pa.	GE
26	1500	322–193	2200	60	18″ Sheet Bar Mill	Geared	1926	Columbia Steel Co.	Pittsburgh, Calif.	W
27	1500	368	2200	25	Sheet Bar (Fin.) Mill	Geared	1923	Inland Steel Co.	Chicago, Ill.	W
28	1500	450	2200	30	3 High Skelp Mill	Geared	1915	Spang Chalfant Co.	Etna, Pa.	GE
29	1500	491	6600	25	14″ Cont. Skelp Mill	Geared	1924	Gary Tube Co.	Gary, Ind.	AC
30	1500	705	2200	60	Skelp Mill Scarfing Stand	Geared	1923	Bethlehem Steel Corp.	Coatesville, Pa.	AC
31	1800	275–550	600	d.c.	12″ Skelp Mill	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	W
32	1800	275–550	600	d.c.	12″ Skelp Mill	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	W
33	2000	50–100	600	d.c.	30″ Rev. Sheet Bar Mill	Direct	1919	Follansbee Brothers Co.	Toronto, Ohio	W
34	2000	85–165	600	d.c.	21″ Continuous Sheet Bar and Skelp Mill	Direct	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	GE
35	2000	85–165	600	d.c.	21″ Continuous Sheet Bar and Skelp Mill	Direct	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	GE
36	2000	85–165	600	d.c.	21″ Continuous Sheet Bar and Skelp Mill	Direct	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	GE
37	2000	200–400	600	d.c.	14″-12″ Skelp Mill	Geared	1926	Wheeling Steel Co.	Benwood, W. Va.	GE
38	2000	200–400	600	d.c.	14″-12″ Skelp Mill	Geared	1926	Wheeling Steel Co.	Benwood, W. Va.	GE
39	2000	200–400	600	d.c.	14″–12″ Skelp Mill	Geared	1926	Wheeling Steel Co.	Benwood, W. Va.	GE
40	2000	234–161	2200	60	10″ Skelp (Fin.) Mill	Belted	1916	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind	W
41	2000–2000	250–161	6600	25	10″ Skelp Mill	Geared	1915	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
42	2000	275–550	600	d.c.	10″ Skelp Mill	Geared	1928	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
43	2000	294	6600	25	14″ Cont. Skelp Mill	Coupled	1924	Gary Tube Co.	Gary, Ind.	AC
44	2000	300–500	600	d.c.	Bar Plate Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
45	2000	300–500	600	d.c.	Bar Plate Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
46	2000	300–500	600	d.c.	Bar Plate Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
47	2000	350–234	2200	60	10″ Skelp (Rough.) Mill	Geared	1916	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	W
48	2300–1300	115.4–65	6600	25	10″ Skelp Mill	Geared	1915	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
49	2500	146	6600	25	16″ Cont. Skelp Mill	Coupled	1924	Gary Tube Co.	Gary, Ind.	AC
50	2500	184	6600	25	Skelp Mill	Rope	1908	National Tube Co.	Lorain, Ohio	W
51	2500	184	6600	25	Skelp Mill	Rope	1908	National Tube Co.	Lorain, Ohio	W
52	2500	252	2200	60	Skelp Mill	Geared	1917	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	W
53	2500	252	2200	60	Skelp Mill	Geared	1917	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	W
54	2500	295	6600	25	16″ Cont. Skelp Mill	Coupled	1924	Gary Tube Co.	Gary, Ind.	AC
55	2600	320–275	600	d.c.	26″ & 21″ Cont. Skelp Mill	Direct	1926	Bethlehem Steel Co.	Sparrows Point, Md.	GE
56	3000	65–130	600	d.c.	30″ Rev. Bar Mill	Direct	1927	National Tube Co.	Lorain, Ohio	W
57	3000	65–130	650	d.c.	30″ Rev. Bar Mill	Direct	1927	Jones & Laughlin Steel Co.	Woodlawn, Pa.	W
58	3000	184	6600	25	16″ Cont. Skelp Mill	Coupled	1924	Gary Tube Co.	Gary, Ind.	AC
59	3000	354–212	2200	60	Skelp Mill	Geared	1920	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	W
60	3000–2250–1500	500–375–250	2200	25	24″ Sheet Bar Mill	Geared	1926	Inland Steel Co.	Indiana Harbor, Ind.	GE
61	3600–1940	290–156	2200	60	21″ Continuous Sheet Bar and Skelp Mill	Geared	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	GE
62	4000	80	650	d.c.	30″ Universal Skelp Mill	Direct	1922	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
63	4000	83.3	6600	25	26″ x 21″ Cont. Skelp Mill	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	GE
64	4500	120–255	750	d.c.	Univ. Skelp Mill	Coupled	1925	Gary Tube Co.	Gary, Ind.	AC
65	5000	100	2200	60	19″ Cont. Sheet Bar Mill	Direct	1927	Continental Steel Corp.	Kokomo, Ind.	GE
66	5000	514	6600	60	18″ Sheet Bar Mill	Geared	1928	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
67	5500	370	6600	25	16″ Cont. Skelp Mill	Geared	1924	Gary Tube Co.	Gary, Ind.	AC
68	6500	187.5	6600	25	26″ x 21″ Cont. Skelp Mill	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	GE
69	6700–5000–3320	500–375–250	6600	25	26″ x 21″ Cont. Skelp Mill	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	GE
70	7500–4040	250–134	2200	60	21″ Continuous Sheet Bar and Skelp Mill	Geared	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	GE

MULTI-SPEED DRIVES

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1	300–300–150	600–400–300	440		Bar Mill	Chain	1916	Vulcan Crucible Steel Co.	Aliquippa, Pa.	GE
2	350–350	150–100	6600		12″ Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
3	350–350	375–214	6600		9″ Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
4	400–225	600–300	550		Bar Mill	Geared	1909	Ludlum Steel Co.	Watervliet, N. Y.	GE
5	400–265	875–585	2200	60	Bar Mill	Geared	1913	Old Dominion Iron & Nail Co.	Richmond, Va.	W
6	450–360	870–695	2200	60	10″ Merchant Mill	Geared	1918	Cleveland Hardware Co.	Cleveland, Ohio	W
7	450–360	875–700	2200	60	9″ Merchant Mill	Geared	1915	National Lock Washer Co.	Riverside, N. J.	W
8	475–350	240–181	440	25	10″ Merchant Mill	Direct	1914	Kansas City Bolt & Nut Co.	Kansas City, Mo.	W
9	485–360	870–695	2200	60	10″ Merchant Mill	Geared	1915	Old Dominion Iron & Nail Co.	Richmond, Va.	W
10	500	730–485	2200	50	8″ Merchant Mill	Geared	1919	Southern Calif. Iron & Steel Co.	Los Angeles, Cal.	W
11	500–250	750–375	3000		Merchant Mill	Geared	1923	Consolidated Rolling Mills	Mexico City, Mex.	GE
12	500–400	775–585	550	40	10″ Merchant Mill	Geared	1917	Cohoes Rolling Mill Co.	Cohoes, N. Y.	W
13	500–400	875–700	550	60	10″–14″ Merchant Mill	Geared	1916	The Texas Steel Co.	Fort Worth, Texas	W
14	550–360	875–585	2200	60	12″ Merchant Mill	Geared	1917	Norfolk & Western Railroad	Roanoke, Va.	W
15	575–575	375–250	6600		8″ Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
16	575–575	300–214	6600		10″ Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
17	600–600	214–93	6600		12″ Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
18	600–300	600–300	550	60	9″ Bar Mill No. 2	Geared	1926	Ludlum Steel Co.	Watervliet, N. Y.	GE
19	800–800	214–167	6600		16″ Merchant Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
20	800–400	450–225	2200	60	Copper Mill	Direct	1925	Anaconda Copper Mining Co.	Mont.	GE

MULTI-SPEED DRIVES—Continued

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
21	800-400	600-300	550		Bar Mill	Geared	1917	Ludlum Steel Co.	Watervliet, N. Y.	GE
22	800-363	706-320	600		10″ Rod Mill	Geared	1922	Wheeling Steel Corp.	Portsmouth, Ohio	GE
23	800	730-485	2200	50	12″ Merchant Mill	Geared	1919	Southern Calif. Iron & Steel Co.	Los Angeles, Cal.	W
24	800-800	900-720	2200		9″ Merchant Mill	Geared	1923	Knoxville Iron Co.	Knoxville, Tenn.	GE
25	800-800	900-720	2200		9″ Merchant Mill	Geared	1923	Knoxville Iron Co.	Knoxville, Tenn.	GE
26	800	875-700	2200	60	16″ Merchant Mill	Geared	1920	Kansas City Bolt & Nut Co.	Kansas City, Mo.	W
27	850-850	214-187	6600		10″ Merchant Mill	Rope	1916	Illinois Steel Co.	Gary, Ind.	GE
28	850-850	214-187	6600		10″ Merchant Mill	Rope	1916	Illinois Steel Co.	Gary, Ind.	GE
29	900-900	214-150	2200		12″ Merchant Mill	Direct	1910	Algoma Steel Co.	Saulte Ste. Marie, Can.	GE
30	1000-400	257-128	550	60	9″ Bar Mill No. 1	Geared	1926	Ludlum Steel Co.	Watervliet, N. Y.	GE
31	1100-1500	91	2200	25	84″ Plate (Fin.) Mill	Direct	1910	American Sheet & Tin Plate Co.	Gary, Ind.	W
32	1300-1300	214-187	6600		10″ Merchant Mill	Geared	1916	Illinois Steel Co.	Gary, Ind.	GE
33	1800-1800	250-125	6600		22″ Merchant Mill	Geared	1913	Bethlehem Steel Co.	Bethlehem, Pa.	GE
34	1800-1350	300	2200	60	Tube Rolling Mill	Geared	1927	National Tube Co.	Ellwood City, Pa.	GE
35	2000	163-113	6600	25	10″ Merchant Mill	Direct	1909	Illinois Steel Co.	Gary, Ind.	W
36	2500	113-91	6600	25	12″ Merchant Mill	Geared	1909	Illinois Steel Co.	Gary, Ind.	W
37	6500-4500	107-53	6600		60″ 3-High Univ. plate Mill	Direct	1909	Illinois Steel Co.	Gary, Ind.	GE

REVERSING MILL DRIVES

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1	350	275-470	375	d.c.	Reversing Copper Mill	Geared	1920	American Brass Company	Buffalo, N. Y.	GE
2	350	275-470	375	d.c.	Reversing Copper Mill	Geared	1920	American Brass Company	Buffalo, N. Y.	GE
3	350	275-470	375	d.c.	Reversing Copper Mill	Geared	1920	American Brass Company	Kenosha, Wis.	GE
4	350	275-470	375	d.c.	Reversing Copper Mill	Geared	1922	Taunton-New Bedford Copper Co.	Taunton, Mass.	GE
5	500	200	500	d.c.	78″ Rev. Brass Plate Mill	Geared	1920	West Virginia Metal Products Co.	Fairmont, W. Va.	W
6	500	360-612	600	d.c.	Reversing Hot Mill	Geared	1925	Michigan Copper & Brass Co.	Detroit, Mich.	GE
7	700	86	450	d.c.	Shear Intensifier	Direct	1918	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	GE
8	800	20	230	d.c.	32″ x 48″ Plate Mill	Coupled	1910	American Sheet & Tin Plate Co.	Gary, Ind.	CW
9	800	20	230	d.c.	32″ x 48″ Plate Mill	Coupled	1910	American Sheet & Tin Plate Co.	Gary, Ind.	CW
10	800	37-70	500	d.c.	Plate Mill	Coupled		Universal Rolling Mill Co.	Bridgeville, Pa.	AC
11	1000	40-60	270	d.c.	28″ Rev. Copper Mill	Direct	1927	Rome Brass & Copper Co.	Rome, N. Y.	GE
12	1000	50-100	600	d.c.	24″ Billet (Roughing)	Direct	1916	American Steel & Wire Co.	Cleveland, Ohio	W
13	1000	50-175	600	d.c.	24″ Mill	Direct	1916	Central Steel Co.	Massillon, Ohio	W
14	1200	25-50	330	d.c.	Reversing Plate Mill	Direct	1926	Lukens Steel Co.	Coatesville, Pa.	GE
15	1500	65-225	750	d.c.	48″ Rev. Structural Mill	Direct	1926	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
16	1500	65-225	750	d.c.	48″ Rev. Structural Mill	Direct	1926	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
17	1750	70-120	600	d.c.	20″ Billet Mill	Direct	1916	Youngstown Sheet & Tube Co.	Ind ana Harbor, Ind.	W
18	1800	40	600	d.c.	84″ Rev. Shrd. Plate Mill	Direct	1919	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
19	2000	50-100	600	d.c.	30″ Bar Mill	Direct	1919	Follansbee Brothers Co.	Toronto, O.	W
20	2000	0-57-163	700	d.c.	52″ Struct. Edging Mill	Direct	1926	Carnegie Steel Co.	Homestead, Pa.	W
21	2000	0-57-163	700	d.c.	52″ Struct. Edging Mill	Direct	1926	Carnegie Steel Co.	Homestead, Pa.	W
22	2100	50-125	700	d.c.	42″ Universal Plate Mill	Direct	1916	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	W
23	2100	47-120	700	d.c.	34″ Blooming Mill	Direct	1916	Penn Seaboard Steel Corporation	New Castle, Del.	W
24	2150	50-100	535	d.c.	Reversing Bar Mill	Direct	1926	Standard Seamless Tube Co.	Economy, Pa.	GE
25	2200	50-120	600	d.c.	40″ Universal Plate Mill	Direct	1919	Dominion Foundrys & Steel Co.	Hamilton, Ont.	W
26	2200	70-150	600	d.c.	28″ Blooming Mill	Direct	1920	Atlantic Steel Co.	Atlanta, Ga.	W
27	2500	53-80	660	d.c.	Reversing Plate Mill	Direct	1926	Lukens Steel Co.	Coatesville, Pa.	GE
28	2900	47-120	700	d.c.	34″ Blooming Mill	Direct	1917	Sharon Steel Hoop Co.	Youngstown, Ohio	W
29	3000	65-130	600	d.c.	30″ Rev. Bar Mill	Direct	1927	National Tube Co.	Lorain, Ohio	W
30	3000	65-130	650	d.c.	30″ Rev. Bar Mill	Direct	1927	Jones & Laughlin Steel Co.	Woodlawn, Pa.	W
31	3000	70-175	750	d.c.	24″ Bar Mill	Direct	1927	Inland Steel Corp.	Ind. Harbor, Ind.	GE
32	3000	70-150	750		24″ Reversing Bar Mill	Direct	1925	Inland Steel Co.	Indiana Harbor, Ind.	GE
33	3100	70-150	600	d.c.	Universal Plate Mill	Direct	1925	International Harvester Co	Chicago, Ill.	W
34	3200	50-120	700	d.c.	34″ Struct. (Rough.) Mill	Direct	1915	Inland Steel Co.	Indiana Harbor, Ind.	W
35	3200	50-120	700	d.c.	28″ Struct. (Fin.) Mill	Direct	1915	Inland Steel Co.	Indiana Harbor, Ind.	W
36	3250	50-120	500	d.c.	36″ Blooming Mill	Direct	1916	Am. Rolling Mill Co.	Ashland, Ky.	GE
37	3250	50-120	500	d.c.	34″ Blooming Mill	Direct	1916	Keystone Steel & Wire Co.	Peoria, Ill.	GE
38	3500	70-100	525	d.c.	32″ Blooming Mill	Direct	1913	Steel Company of Canada	Hamilton, Ont.	W
39	3500	50- 75	700	d.c.	34″ Blooming Mill	Direct	1914	Central Steel Co.	Massillon, Ohio	W
40	3500	50-120	700	d.c.	35″ Roughing Struct. Mill	Direct	1924	Bethlehem Steel Corp.	Lackawanna, N. Y.	W
41	3500	50-120	700	d.c.	34″ Blooming Mill	Direct	1925	Kokomo Steel & Wire Co.	Kokomo, Ind.	W
42	3500	50-120	700	d.c.	36″ Blooming Mill	Direct	1925	Phoenix Iron Co.	Phoenixville, Pa.	W
43	3500	50-120	750	d.c.	32″ Structural Mill	Direct	1928	Illinois Steel Co.	So. Chicago, Ill.	GE
44	3600	40- 90	600	d.c.	35″ Blooming Mill	Direct	1913	Bethlehem Steel Co.	Bethlehem, Pa.	W
45	3600	40- 90	600	d.c.	40″ Blooming Mill	Direct	1917	Illinois Steel Co.	Gary, Ind.	W
46	3750	50-130	700	d.c.	Blooming Mill	Direct	1927	Central Alloy Steel Co.	Massillon, Ohio	AC
47	4000	0-150	575	d.c.	36″ Univ. Plate Mill	Direct	1905	Illinois Steel Co.	South Chicago, Ill.	W
48	4000	50-120	700	d.c.	34″ Blooming Mill	Direct	1924	Dorner Steel Co.	Buffalo, N. Y.	GE
49	4000	58-140	750	d.c.	34″ Rev. Blooming Mill	Direct	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
50	4000	80-135	650	d.c.	30″ Univ. Skelp Mill	Direct	1922	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
51	4000	0- 80	1200	d.c.	34″ Blooming Mill	Coupled		Algoma Steel Co.	Sault Ste. Marie, Can.	AC
52	5000	40-120	600	d.c.	40″ Blooming Mill	Direct	1916	National Tube Co.	Lorain, Ohio	W
53	5000	40-120	600	d.c.	35″ Blooming Mill	Direct	1916	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	W
54	5000	40-120	600	d.c.	35″ Blooming Mill	Direct	1915	United Alloy Steel Corporation	Canton, Ohio	W
55	5000	50-120	700	d.c.	36″ Rev. Roughing Struct.	Direct	1924	Carnegie Steel Co.	Homestead, Pa.	W
56	5000	50-120	900	d.c.	36″ Roughing Mill	Direct	1927	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
57	5000	50-120	600	d.c.	Blooming Mill	Direct	1928	Aluminum Co. of America	Massena, N. Y.	AC
58	5000	70-150	900	d.c.	27″ Rev. Hot Strip Mill	Direct	1926	Columbia Steel Co.	Butler, Pa.	GE
59	5000	75-100	700	d.c.	48″ Universal Plate Mill	Direct	1923	Bethlehem Steel Co.	Lackawanna, N. Y.	W
60	5000	75-150	700	d.c.	28″ Fin. Structural Mill	Direct	1924	Bethlehem Steel Corp.	Lackawanna, N. Y.	W
61	6000	40-120	600	d.c.	44″ Blooming Mill	Direct	1919	Bethlehem Steel Co.	Steelton, Pa.	W
62	6000	75-140	750	d.c.	28″ Structural Mill	Direct	1928	Illinois Steel Co.	So. Chicago, Ill.	GE
63	6500	40-120	600	d.c.	40″ Blooming Mill	Direct	1915	Inland Steel Co.	Indiana Harbor, Ind.	W
64	6500	50-120	600	d.c.	36″ Blooming Mill	Direct	1916	Trumbull Steel Co.	Warren, Ohio	GE
65	6500	50-120	600	d.c.	40″ Blooming Mill	Direct	1916	Bethlehem Steel Co.	Sparrows Point, Md.	GE
66	6500	50-120	600	d.c.	40″ Blooming Mill	Direct	1922	Otis Steel Co.	Cleveland, Ohio	GE
67	6500	60-140	700	d.c.	35″ Rev. Blooming Mill	Direct	1927	Illinois Steel Co.	So. Chicago, Ill.	W
68	7000	40-120	700	d.c.	Blooming Mill	Coupled	1925	Illinois Steel Co.	So. Chicago, Ill.	AC
69	7000	50-100	700	d.c.	60″ Universal Plate Mill	Direct	1919	Bethlehem Steel Co.	Sparrows Point, Md.	W
70	7000	50-100	650		46″ Slabbing Mill	Direct	1925	Bethlehem Steel Co.	Sparrows Point, Md.	GE
71	7000	50-120	700	d.c.	40″ Rev. Blooming Mill	Direct	1923	Bethlehem Steel Co.	Lackawanna, N. Y.	W
72	7000	50-120	700	d.c.	44″ Blooming Mill	Direct	1924	Carnegie Steel Co.	Homestead, Pa.	W
73	7000	50-120	700	d.c.	40″ Blooming Mill	Direct	1924	International Harvester Co. Wisconsin Steel Works	Chicago, Ill.	W
74	7000	50-120	700	d.c.	36″ Rev. Rougher Mill	Direct	1925	Inland Steel Co.	Indiana Harbor, Ind.	W
75	7000	0-50-120	700	d.c.	40″ Rev. Blooming Mill	Direct	1926	Forged Steel Wheel Co.	Butler, Pa.	W
76	7000	50-150	700	d.c.	52″ Structural Mill	Direct	1925	Carnegie Steel Co.	Homestead, Pa.	W
77	7000	50-150	700	d.c.	52″ Structural Mill	Direct	1925	Carnegie Steel Co.	Homestead, Pa.	W

REVERSING MILL DRIVES—Continued

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
78	7000	55–120	900	d.c.	45″ Blooming Mill	Direct	1917	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	GE
79	7000	40–80	750	d.c.	54″ Rev. Blooming Mill	Direct	1926	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
80	7000	50–120	750	d.c.	44″ Blooming Mill	Direct	1927	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
81	7000	50–100	750	d.c.	Slabbing Mill	Direct	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
82	7000	50–120	750	d.c.	40″ Blooming Mill	Direct	1928	Illinois Steel Co.	So. Chicago, Ill.	GE
83	7000	50–130	700	d.c.	40″ Blooming Mill	Direct	1928	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
84	7000	65–100	750	d.c.	48″ Rev. Structural Mill	Direct	1926	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
85	7000	65–100	750	d.c.	48″ Rev. Structural Mill	Direct	1926	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
86	8000	40–120	700	d.c.	54″ Blooming Mill	Direct	1925	Carnegie Steel Co.	Homestead, Pa.	W
87	8000	150	600	d.c.	28″ Rail Mill	Direct	1917	Bethlehem Steel Co.	Lackawanna, N. Y.	GE

A. C. SPEED SETS

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1	300–300	187.5–112.5	2200	25	12″ Merchant Mill	Direct	1914	Bethlehem Steel Co.	Lebanon, Pa.	GE
2	300–300	187.5–112.5	2200	25	12″ Merchant Mill	Direct	1914	Bethlehem Steel Co.	Lebanon, Pa.	GE
3	300–300	300–180	2200		10″ Merchant Mill	Direct	1914	Bethlehem Steel Co.	Lebanon, Pa.	GE
4	300–225–165	335–225–165	6600		12″ Hot Strip Mill	Geared	1920	Illinois Steel Co.	Gary, Ind.	GE
5	300–300	500–300	2200		9″ Merchant Mill	Direct	1914	Bethlehem Steel Co.	Lebanon, Pa.	GE
6	300–300	500–300	2200		8″ Merchant Mill	Direct	1914	Bethlehem Steel Co.	Lebanon, Pa.	GE
7	300–150	590–292	2200	60	9″ Merchant Mill	Geared	1920	Cleveland Hardware Co.	Cleveland, Ohio	W
8	350–235	300–200	6600		Merchant Mill	Geared	1920	Illinois Steel Co.	Gary, Ind.	GE
9	350–350	360–240	440	60	Bar Mill	Coupled		Simmons Mfg. Co.	Kenosha, Wis.	AC
10	400–400	107– 64	2200		16″ Bar Mill	Direct	1914	Bethlehem Steel Co.	Lebanon, Pa.	GE
11	400	720–450	2200	60	Bar Mill	Geared		Cyclops Steel Co.	Titusville, Pa.	AC
12	450	352–230	2200	60	8″ Merchant Mill	Direct	1919	Bourne-Fuller Co.	Cleveland, Ohio	W
13	450–360	440–350	2200	60	Cont. Hoop (Fin.) Mill	Direct	1920	Connors Steel Co.	Birmingham, Ala.	W
14	450–380	700–595	2200	60	Cont. Hoop (Fin.) Mill	Direct	1920	Connors Steel Co.	Birmingham, Ala.	W
15	450	730–490	4000	25	10″ Merchant Mill	Geared	1917	Atlas Steel Corporation	Dunkirk, N. Y.	W
16	500–385–250	130–100–65	440		14″ Merchant Mill	Direct	1923	Halcomb Steel Co.	Syracuse, N. Y.	GE
17	500–500	327–200	440		9″ Merchant Mill	Direct	1913	Bourne Fuller Co.	Cleveland, Ohio	GE
18	500–500–500	500–375–265	2200		10″ Merchant Mill	Direct & Belt	1916	Donner Steel Co.	Buffalo, N. Y.	GE
19	500	575–865	2200	60	10″ Merchant Mill	Geared	1921	International Nickel Co.	Huntington, W. Va.	W
20	500	575–865	2200	60	10″ Merchant Mill	Geared	1921	International Nickel Co.	Huntington, W. Va.	W
21	500–340	588–400	2200	60	Rod Mill	Geared	1928	Keystone Steel & Wire Co.	Peoria, Ill.	W
22	{500 {250	880–514} 440–256}	2200	60	10″ Merchant Mill	Geared	1919	Hunter Crucible Steel Co.	Cleveland, Ohio	W
23	500	888–540	6600	60	11″ Finishing Stand	Coupled		Tennessee Coal, Iron & R. R. Co.	Birmingham, Ala.	AC
24	550	320–206	2200	60	10″ Hoop Mill	Direct	1917	Atlantic Steel Co.	Atlanta, Ga.	W
25	600–525	250–125	2200		16″ & 15″ Merchant Mill	Direct & Rope	1913	Bethlehem Steel Co.	Steelton, Pa.	GE
26	600–600	300–214	2200	25	Bar Mill	Coupled & Rope		St. Louis Screw Co.	St. Louis, Mo.	W
27	600	300–214	2200	25	Bar Mill	Chain		St. Louis Screw Co.	St. Louis, Mo.	W
28	600–400–200	321–214–107	440		9″ Merchant Mill	Direct	1923	Halcomb Steel Co.	Syracuse, N. Y.	GE
29	600–400	375–210	2200		9″ Merchant Mill	Direct	1912	Forged Steel Wheel Co.	Butler, Pa.	GE
30	600–600–600	469–375–281	2200		8″ Merchant Mill	Direct	1919	Donner Steel Co.	Buffalo, N. Y.	GE
31	600	585–325	500	40	16″ Merchant Mill	Geared	1917	Cohoes Rolling Mill Co.	Cohoes, N. Y.	W
32	600–500–400	600–500–400	2200		Merchant Mill, No. 19	Direct	1916	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
33	600–600	720–360	6600	60	Hot Strip Mill	Geared		Weirton Steel Co.	Weirton, W. Va.	AC
34	700–600–400	400–300–200	2200	25	Merchant Mill, No. 10	Direct	1916	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
35	700–600–400	400–300–200	2200	25	Merchant Mill, No. 10	Belt	1916	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
36	700	485–290	2200	25	12″ Merchant Mill	Geared	1916	Halcomb Steel Co.	Syracuse, N. Y.	W
37	700	730–490	4000	25	14″ Merchant Mill	Geared	1916	Atlas Steel Corporation	Dunkirk, N. Y.	W
38	700	880–530	2200	60	10″ Finishing Mill	Geared	1923	Crucible Steel Co. of America, Park Works	Pittsburgh, Pa.	W
39	750–750	225–168	440	60	Bar Mill	Coupled		Simmons Mfg. Co.	Kenosha, Wis.	AC
40	750–625–460	360–300–220	6600		12″ Hot Strip Mill	Direct	1920	Illinois Steel Co.	Gary, Ind.	GE
41	750–600–440	473–375–278	6600		12″ Hot Strip Mill	Direct	1920	Illinois Steel Co.	Gary, Ind.	GE
42	770–700–630	540–490–440	6600	25	Hoop Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	W
43	800	225–150	2200	25	12″ Bar Mill	Direct	1919	Scullin Steel Co.	St. Louis, Mo.	W
44	800	590–292	6600	60	16″ Hoop and Band Mill	Geared	1915	Weirton Steel Co.	Weirton, W. Va.	W
45	800–400	360–180	550	60	Bar Mill	Geared	1926	Ludlum Steel Co.	Watervliet, N. Y.	GE
46	800–400	360–180	550	60	Bar Mill	Geared	1926	Ludlum Steel Co.	Watervliet, N. Y.	GE
47	800–800–800	720–600–480	2200		12″ Hot Strip	Geared	1920	Canadian Electric Steel o.	Montreal, Canada	GE
48	800–800–800	720–600–480	2200	60	3-High Blooming Mill	Geared	1927	Copperweld Steel Co.	Glassport, Pa.	GE
49	800	730–365	2200	50	22″ Bar Mill	Geared	1916	Columbia Steel Co.	Los Angeles, Cal.	W
50	800	730–365	2200	50	12″ Merchant Mill	Geared	1916	Columbia Steel Co.	Los Angeles, Cal.	W
51	800	880–490	2200	60	16″ Bar Mill	Geared	1920	Knoxville Iron Co.	Knoxville, Tenn.	W
52	800	880–623	2200	60	20″ Mer. (Roughing) Mill	Geared	1918	Hoosier Rolling Mill Co.	Terre Haute, Ind.	W
53	840–700–560	360–300–240	6600	40	Merchant Mill	Direct	1925	Bethlehem Steel Co.	Bethlehem, Pa.	GE
54	850–570	214–143	6600		Merchant Mill	Direct	1920	Illinois Steel Co.	Gary, Ind	GE
55	900–710–620	325–257–182	2300		10″ Hoop Mill	Geared	1918	Acme Steel Goods Co.	Riverdale, Ill.	GE
56	1000	209–150	6400	25	24″ Flat (Fin.) Mill	Direct	1916	American Steel & Wire Co.	Cleveland, Ohio	W
57	1000	225–168	4000	60	Rail Rerolling Mill	Direct	1926	Inland Steel Co.	Indiana Harbor, Ind.	GE
58	1000	225–168	4000	60	Rail Rerolling Mill	Direct	1926	Inland Steel Co.	Indiana Harbor, Ind.	GE
59	1000	292–150	2200	60	12″ Merchant Mill	Direct	1918	Central Steel Co.	Massillon, Ohio	W
60	1000	590–450	4000	60	14″ Merchant Mill	Geared	1920	Calumet Steel Co.	Chicago, Ill.	W
61	1000	590–450	4000	60	14″ Merchant Mill	Geared	1920	Calumet Steel Co.	Chicago, Ill.	W
62	1000	590–495	6600	60	24″ Structural Mill	Geared	1917	Tennessee Coal, Iron & R. R. Co.	Birmingham, Ala.	W
63	1100	294–295	2200	60	20″ Merchant Mill	Rope	1912	United Alloy Steel Corporation	Canton, Ohio	W
64	1125–900–675	312–250–187	6600	25	12″ Strip Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	GE
65	1190–875–525	350–250–150	2200	40	Merchant Mill	Direct-Rope	1925	Bethlehem Steel Co.	Lebanon, Pa.	GE
66	1180–955–705	560–450–336	2200		Rod Mill	Belt	1916	Keystone Steel & Wire Co.	Peoria, Ill.	GE
67	1200–1150–800	300–214–150	2200	25	Merchant Mill, No. 10	Geared	1916	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
68	1200–1000–800	300–250–200	4400	25	14″ Merchant Mill	Direct	1919	Buffalo Bolt Co.	N. Tonawanda, N. Y.	GE
69	1200–1000–800	450–375–300	6600	25	8″ Hoop Mill, No. 9	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
70	1200–1000–800	450–375–300	6600	25	8″ Bar Mill, No. 16	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
71	1200–1200–1200	450–360–270	2300		9″ Hot Strip Mill	Geared	1916	Trumbull Steel Co.	Warren, Ohio	GE
72	1200–1200–1200	450–360–270	2300		9″ Hot Strip Mill	Geared	1916	Trumbull Steel Co.	Warren, Ohio	GE
73	1200–1200–1200	450–360–270	2300		9″ Hot Strip Mill	Direct	1916	Trumbull Steel Co.	Warren, Ohio	GE
74	1200–1000–800	450–375–300	6600	25	8″ Hoop Mill, No. 8	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
75	1200–1000–800	450–375–300	6600	25	18″ Band Mill, No. 13	Geared	1919	Carnegie Steel Co.	Youngstown, Ohio	GE
76	1200	505–303	6600	60	16″ Hoop and Band Mill	Geared	1919	Weirton Steel Co.	Weirton, W. Va.	W
77	1200	590–441	2200	50	16″ Duo & Bull Head Mill	Geared	1916	Central Steel Co.	Massillon, Ohio	W
78	1200	590–407	2200	60	20″ Merchant (Fin.) Mill	Geared	1918	Hoosier Rolling Mill Co.	Terre Haute, Ind.	W
79	1200–1200–865	340–277–200	*2200	60	11″ Merchant Mill	Geared	1927	Bourne Fuller Co.	Cleveland, Ohio	GE
80	1250–1000–650	650–500–325	2200		Rod Mill	Belt	1916	Wickwire Spencer Steel Co.	Buffalo, N. Y.	GE
81	1250	712–430	6600	60	3 Stand 12″ Mill	Coupled		Tennessee Coal, Iron & R. R. Co.	Birmingham, Ala.	AC

A. C. SPEED SETS—Continued

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
82	1300–900	214–140	2200		12″ Merchant Mill	Direct	1912	Forged Steel Wheel Co.	Butler, Pa.	GE
83	1350–1000	214–161	4400	25	Rail Rerolling Mill	Direct	1926	Buffalo Steel Co.	Tonawanda, N. Y.	GE
84	1350–1000	214–161	4400	25	Rail Rerolling Mill	Direct	1926	Buffalo Steel Co.	Tonawanda, N. Y.	GE
85	1400–1400	600–405	2200		21″ Merchant Mill	Geared	1915	Union Rolling Mills Co.	Cleveland, Ohio	GE
86	1500	133–81.5	6600	25	18″ Structural Mill	Direct	1915	Bethlehem Steel Co.	Bethlehem, Pa.	W
87	1500	210–140	6600	25	18″ Bar Mill	Geared	1916	Carnegie Steel Co.	Duquesne, Pa.	W
88	1500–1250–875	300–250–175	2200	50	Merchant Mill	Direct	1925	Southern Calif. Iron & Steel Co.	Los Angeles, Cal.	GE
89	1500–1200–900	320–275–200	2200	60	10″ Merchant Mill	Geared	1925	Pacific Coast Steel Co.	So. San Fran.. Cal.	GE
90	1500	322–193	2200	60	18″ Sheet Bar Mill	Geared	1926	Columbia Steel Co.	Pittsburgh, Calif.	W
91	1500–1250–1000	360–300–240	2200		28″ Rail Mill	Geared	1920	Bethlehem Steel Co.	Steelton, Pa.	GE
92	1500	365–244	6600	25	12″ Bar Mill	Rope	1916	Carnegie Steel Co.	Duquesne, Pa.	W
93	1500–1125	375–281	2200		10″ Merchant Mill	Geared	1916	Donner Steel Co.	Buffalo, N. Y.	GE
94	1500–1500	450–360	2300		16″ Hot Strip Mill	Geared	1916	Trumbull Steel Co.	Warren, Ohio	GE
95	1500–1200–900	468–375–281	6600	25	12″ Strip Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	GE
96	1500–1500	514–237	6600	60	Hot Strip Mill	Geared		Weirton Steel Co.	Weirton, W. Va.	AC
97	1500	514–257	6600	60		Coupled	1924	Weirton Steel Co.	Weirton, W. Va.	AC
98	1500	890–540	6600	60	4 Stand 12″ Mill	Coupled		Tennessee Coal, Iron & R. R. Co.	Birmingham, Ala.	AC
99	1600	440–500–540	6600	25	Hoop Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	W
100	1600	440–500–540	6600	25	Hoop Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	W
101	1650–1500–1350	413–375–337	6600		10″ Bar Mill, No. 10	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
102	1750–1750–1140	485–360–235	2200	60	16″-14″ Merchant Mill	Geared	1927	Bourne Fuller Co.	Cleveland, Ohio	GE
103	1800–1500–1200	240–200–160	2300		10″ Hoop Mill	Belt	1918	Acme Steel Goods Co.	Riverdale, Ill.	GE
104	1800–1800–1800	370–300–247	6600		Sheet Bar Mill	Geared	1920	American Rolling Mill Co.	Ashland, Ky.	GE
105	1800–1500–1200	450–375–300	6600		10″ Hoop Mill, No. 11	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
106	1850–1450– 925	120– 94– 60	6600		16″ Hand Bar Mill	Direct	1921	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
107	2000–2000–2000	100–83.3–65	6600		12″ Structural Mill	Direct	1916	Bethlehem Steel Co.	Bethlehem, Pa.	GE
108	2000	234–161	2200	60	10″ Skelp (Fin.) Mill	Belted	1916	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	W
109	2000–2000	250–161	6600		10″ Skelp Mill	Geared	1915	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
110	2000	250–150	2200	60	Morgan Continuous Mil	Coupled		Interstate Iron & Steel Co.	Chicago, Ill.	AC
111	2000	350–234	2200	60	10″ Skelp (Rough.) Mill	Geared	1916	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	W
112	2000–2000–1600	450–360–270	2200		16″ Hot Strip Mill	Geared	1920	Trumbull Steel Co.	Warren, Ohio	GE
113	2000–2000–1600	450–360–270	2200		16″ Hot Strip Mill	Geared	1920	Trumbull Steel Co.	Warren, Ohio	GE
114	2000–2000–1600	450–360–270	2200		16″ Hot Strip Mill	Geared	1920	Trumbull Steel Co.	Warren, Ohio	GE
115	2000	500–300	2200	50	22″ Merchant Mill	Geared	1927	Columbia Steel Corp.	Torrance, Calif..	GE
116	2000–1600–1200	625–500–375	6600	25	12″ Strip Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	GE
117	2000–1600–1200	625–500–375	6600	25	14″ Bar Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	GE
118	2070–1650–1205	235-187.5-137	6600		20″ Hot Strip Mill	Direct	1920	Illinois Steel Co.	Gary, Ind.	GE
119	2200–2000–1800	275–250–225	6600		10″ Bar Mill, No. 15	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
120	2200–2000–1800	275–250–225	6600	25	18″ Band Mill	Geared	1925	Carnegie Steel Co.	Youngstown, Ohio	GE
121	2200	505–303	2200	60	18″ Bar Mill	Geared	1919	Central Steel Co.	Massillon, Ohio	W
122	2300–1300	115.4–65	6600		10″ Skelp Mill	Geared	1915	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
123	2360–1880–1440	410–327–250	2200		Rod Mill	Geared	1916	Keystone Steel & Wire Co.	Peoria, Ill.	GE
124	2470–1725–1235	430–300–215	2200		Rod Mill	Geared	1916	Wickwire Spencer Steel Co.	Buffalo, N. Y.	GE
125	2500	354–177	6600	60	16″ Hoop and Band Mill	Geared	1915	Weirton Steel Co.	Weirton, W. Va.	W
126	2750–2240–1750	262–214–167	6600		12″ Hot Strip Mill	Direct	1920	Illinois Steel Co.	Gary, Ind.	GE
127	2750–2500–2250	275–250–225	6600		14″ Bar Mill, No. 14	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
128	3000–3000–3000	155–144–130	6600		24″ Structural Mill	Direct	1917	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	GE
129	3000–2500–2000	300–250–200	6600		18″ Band Mill, No. 13	Direct	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
130	3000–2500–2000	300–250–200	6600		12″ Hoop Mill, No. 12	Geared	1916	Carnegie Steel Co.	Youngstown, Ohio	GE
131	3000	354–212	2200	60	24″ Skelp Mill	Geared	1920	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	W
132	3000–2250–1500	500–375–250	2200	25	24″ Sheet Bar Mill	Geared	1926	Inland Steel Co.	Indiana Harbor, Ind.	GE
133	3000	505–300	2200	60	12″ Merchant Mill	Geared	1920	United Alloy Steel Corporation	Canton, Ohio	W
134	3600–1940	290–156	2200	60	21″ Cont. Sheet Bar and Skelp Mill	Geared	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	GE
135	4500–4500	500–300	2200		14″ Merchant Mill	Geared	1923	Inland Steel Co.	Indiana Harbor, Ind.	GE
136	5000–4000–3000	450–360–270	2200	60	16″ Hot Strip Mill	Direct	1925	Trumbull Steel Co.	Warren, Ohio	GE
137	5500–4400–3400	170–136–105	6600		20″ Hot Strip Mill	Direct	1920	Illinois Steel Co.	Gary, Ind.	GE
138	5610–4500–3370	156-125-93.6	6600	25	12″ Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	GE
139	6700–5000–3320	500–375–250	6600	25	26″ x 21″ Cont. Mill	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	GE
140	7500–4040	250–134	2200	60	21″ Cont. Sheet Bar and Skelp Mill	Geared	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	GE

DIRECT CURRENT ADJUSTABLE SPEED DRIVES

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
1	200–300	360–920	230		Merchant Mill	Direct	1919	Bethlehem Steel Co.	Lackawanna, N. Y.	GE
2	300	175–225	600	d.c.	10″ Merchant Mill	Direct	1926	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
3	300	175–300	230	d.c.	Tube Mill	Direct	1927	Babcock & Wilcox	Beaver Falls, Pa.	W
4	300	175–300	230	d.c.	Tube Mill	Direct	1927	Babcock & Wilcox	Beaver Falls, Pa.	W
5	300	225–450	230	d.c.	Merchant Mill	Direct	1928	Barton Spider Web. Co.	Chicago, Ill.	W
6	300	250–750	250	d.c.	12″ Hoop Mill	Geared	1928	Carnegie Steel Co.	Youngstown, Ohio	W
7	300	250–750	250	d.c.	10″ Merchant Mill	Geared	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
8	300	267–800	230	d.c.	Hot Merchant Mill	Geared	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
9	300	267–800	230	d.c.	Hot Merchant Mill	Geared	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
10	300	267–800	230	d.c.	Hot Merchant Mill	Geared	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
11	300	300–400	230	d.c.	Cold Rolling Mill	Geared	1914	Trumbull Steel Co.	Warren, Ohio	W
12	300	300–600	230	d.c.	20″ x 30″ Brass Mill	Geared	1920	W. Va. Metal Products Co.	Fairmont, W. Va.	W
13	300	300–600	230	d.c.	20″ x 30″ Brass Mill	Geared	1920	W. Va. Metal Products Co.	Fairmont, W. Va.	W
14	300	300–600	230	d.c.	22″ x 36″ Brass Mill	Geared	1920	W. Va. Metal Products Co.	Fairmont, W. Va.	W
15	300	300–600	230	d.c.	22″ x 36″ Brass Mill	Geared	1920	W. Va. Metal Products Co.	Fairmont, W. Va.	W
16	300	300–400	230	d.c.	Cold Rolling	Geared	1920	Alan Wood, Iron & Steel Co.	Conshohocken, Pa	W
17	300	300–650	250	d.c.	10″ Rod Mill	Direct	1927	Washburn Wire Co.	Phillipsdale, R. I.	W
18	300	300–650	250	d.c.	10″ Rod Mill	Direct	1927	Washburn Wire Co.	Phillipsdale, R. I.	W
19	300	315–630	230		8″ Merchant Mill	Direct	1919	Donner Steel Co.	Buffalo, N. Y.	GE
20	300	325–650	220	d.c.	Sheet Mill		1919	Aluminum Company of America	New Kensington, Pa.	AC
21	300	345–500	500	d.c.	Tube Rolling Mill	Geared	1912	Pittsburgh Steel Products Co.	Monessen, Pa.	W
22	300	350–450	230	d.c.	Merchant Bar Mill	Geared	1916	Carbon Steel Co.	Pittsburgh, Pa.	W
23	300	350–450	230	d.c.	Lap Welding Mill	Coupled	1923	Gary Tube Co.	Gary, Ind.	AC
24	300	400–800	230		Cold Strip Mill	Geared	1913	Weirton Steel Co.	Weirton, W. Va.	GE
25	300	400–800	230		Cold Strip Mill	Geared	1913	Weirton Steel Co.	Weirton, W. Va.	GE
26	300	400–800	230		Cold Strip Mill	Geared	1913	Weirton Steel Co.	Weirton, W. Va.	GE
27	300	400–800	230		Cold Strip Mill	Geared	1913	Weirton Steel Co.	Weirton, W. Va.	GE
28	300	400–800	230		20″ Cold Strip Mill	Geared	1919	Trumbull Steel Co.	Warren, Ohio	GE
29	300	400–800	230		20″ Cold Strip Mill	Geared	1919	Trumbull Steel Co.	Warren, Ohio	GE
30	300	400–800	230		20″ Cold Strip Mill	Geared	1919	Trumbull Steel Co.	Warren, Ohio	GE
31	300	400–800	230	d.c.	20″ Cold Strip Mill	Geared	1919	Trumbull Steel Co.	Warren, Ohio	GE
32	300	400–800	230	d.c.	Edging Rolls	Geared	1926	Trumbull Steel Co.	Warren, Ohio	GE
33	300–400	400–800	230	d.c.	14″-4-High Tandem Copper Mill	Geared	1927	Rome Brass & Copper Co.	Rome, N. Y.	GE

DIRECT CURRENT ADJUSTABLE SPEED DRIVES—Continued

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
33	300	450–750	230	d.c.	Wheel Mill	Geared	1913	Bethlehem Steel Co.	Johnstown, Pa.	AC
34	300	450–750	230	d.c.	Wheel Mill	Geared	1913	Bethlehem Steel Co.	Johnstown, Pa.	AC
35	320	400–800	230	d.c.	Cold Strip Drive	Geared	1926	International Nickle Co.	Huntington, W. Va.	AC
36	350	200–300	250	d.c.	9″ Merchant Mill	Direct	1914	Natl. Farming Machinery, Ltd.	Montmagny, P. Q.	W
37	350	240–360	240	d.c.	10″ Merchant Mill	Direct	1911	LaClede Steel Co.	St. Louis, Mo.	GE
38	350	240–480	240	d.c.	10″ Merchant Mill	Direct	1923	LaClede Steel Co.	St. Louis, Mo.	GE
39	350	250–325	230	d.c.	9″ Merchant Mill	Direct	1921	Wayne Steel Company	Erie, Pa.	W
40	350	275–550	230	d.c.	Tube Reeling Mill	Geared	1923	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
41	350	275–550	230	d.c.	Tube Reeling Mill	Geared	1928	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
42	350	300–425	230	d.c.	8″ Rod Mill	Direct	1915	United Alloy Steel Corporation	Canton, Ohio	W
43	350	360–450	230	d.c.	Welding Rolls	Direct	1920	National Tube Company	Lorain, Ohio	GE
44	350	360–450	230	d.c.	Welding Rolls	Direct	1920	National Tube Company	Lorain, Ohio	GE
45	350	400–800	230	d.c.	8″ Merchant Mill	Direct	1928	Laclede Steel Co.	Alton, Ill.	GE
46	350	450–600	230	d.c.	Band Mill	Direct	1926	Sharon Steel Hoop Co.	Sharon, Pa.	CW
47	350	500	230	d.c.	16″ Cont. Skelp Mill	Geared	1924	Gary Tube Co.	Gary, Ind.	AC
48	350	524–850	230	d.c.	18″ Blading Mill	Geared	1924	W. E. & M. Co.	South Phila. Works	W
49	360	300–600	230	d.c.	Rod Mill	Direct	1922	United Alloy Steel Corporation	Canton, Ohio	W
50	360	350–500	230	d.c.	7″ Rod Mill	Direct	1915	United Alloy Steel Corporation	Canton, Ohio	W
51	375	430–860	230	d.c.	20″ Cold Rolling Mill	Geared	1922	Otis Steel Company	Cleveland, Ohio	W
52	375	430–860	230	d.c.	20″ Cold Rolling Mill	Geared	1922	Otis Steel Company	Cleveland, Ohio	W
53	375	430–860	230	d.c.	20″ Cold Rolling Mill	Geared	1922	Otis Steel Company	Cleveland, Ohio	W
54	375	430–860	230	d.c.	20″ Cold Rolling Mill	Geared	1922	Otis Steel Company	Cleveland, Ohio	W
55	375	430–860	230	d.c.	20″ Cold Rolling Mill	Geared	1922	Otis Steel Company	Cleveland, Ohio	W
56	375	430–860	230	d.c.	Cold Roll Mill	Geared	1925	Otis Steel Co.	Cleveland, Ohio	GE
57	375	430–860	230	d.c.	Cold Roll Mill	Geared	1925	Otis Steel Co.	Cleveland, Ohio	GE
58	400	180–540	600	d.c.	Merchant Mill	Direct	1928	American Steel & Wire Co.	Cleveland, Ohio	W
59	400	223–669	600	d.c.	Merchant Mill	Direct	1928	American Steel & Wire Co.	Cleveland, Ohio	W
60	400	200–300	230	d.c.	9″ Merchant Mill	Direct	1914	United Alloy Steel Corporation	Canton, Ohio	W
61	400	240–721	600	d.c.	9″ Merchant Mill	Geared	1926	Illinois Steel Co.	Gary, Ind.	GE
62	400	240–721	600	d.c.	9″ Merchant Mill	Geared	1926	Illinois Steel Co.	Gary, Ind.	GE
63	400	240–721	600	d.c.	9″ Merchant Mill	Geared	1926	Illinois Steel Co.	Gary, Ind.	GE
64	400	240–721	600	d.c.	9″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
65	400	250–500	230	d.c.	10″ Merchant Mill	Direct	1920	Timken Roller Bearing Co.	Canton, Ohio	GE
66	400	275–500	550	d.c.	12″ Hot Strip Mill	Direct	1916	American Steel & Wire Co.	Cleveland, Ohio	GE
67	400	250–750	600	d.c.	Merchant Mill	Direct	1928	American Steel & Wire Co.	Cleveland, Ohio	W
68	400	295–885	600	d.c.	Merchant Mill	Direct	1928	American Steel & Wire Co.	Cleveland, Ohio	W
69	400	350	230	d.c.	Tube Reeling Drive	Geared	1927	National Tube Co.	Lorain, Ohio	AC
70	400	350	230	d.c.	Tube Reeling Drive	Geared	1927	National Tube Co.	Lorain, Ohio	AC
71	400	400–450	220	d.c.	8″ Merchant Mill	Direct	1911	Illinois Steel Co.	Milwaukee, Wis.	W
72	400	400–800	230	d.c.	Cold Strip Mill	Geared	1926	Trumbull Steel Co.	Warren, Ohio	GE
73	400	400–800	230	d.c.	Cold Strip Mill	Geared	1927	Trumbull Steel Co.	Warren, Ohio	GE
74	400	400–800	230	d.c.	Cold Strip Mill	Geared	1927	Trumbull Steel Co.	Warren, Ohio	GE
75	400	400–800	230	d.c.	Cold Strip Mill	Geared	1927	Trumbull Steel Co.	Warren, Ohio	GE
76	400	400–800	230	d.c.	Cold Strip Mill	Geared	1927	Central Alloy Steel Co.	Massillon, Ohio	GE
77	400	400–800	230	d.c.	Cold Mill	Geared	1927	American Sheet & Tin Plate Co.	McKeesport, Pa.	GE
78	400	420–1050	250	d.c.	12″ Hoop Mill	Geared	1928	Carnegie Steel Co.	Youngstown, Ohio	W
79	400	420–1050	250	d.c.	10″ Merchant Mill	Geared	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
80	400	480	440	25	Merchant Mill	Geared	1927	Bethlehem Steel Co.	Lackawanna, N. Y.	CW
81	400	500–1000	600	d.c.	Strip Mill	Geared	1926	Forged Steel Wheel Co.	Butler, Pa.	AC
82	400	500–1000	600	d.c.	Strip Mill	Geared	1926	Forged Steel Wheel Co.	Butler, Pa.	AC
83	400	500–1000	600	d.c.	Strip Mill	Geared	1926	Forged Steel Wheel Co.	Butler, Pa.	AC
84	400	500–1000	600	d.c.	Strip Mil,	Geared	1926	Forged Steel Wheel Co.	Butler, Pa.	AC
85	400–200	800–400	230	d.c.	Copper Sheet Mill	Geared	1925	Rome Brass & Copper Co.	Rome, N. Y.	GE
86	450	200–400	230	d.c.	26″ x 72″ Sheet Zinc Mill	Geared	1924	Illinois Zinc Co.	Peru, Illinois	W
87	450	211–422	600	d.c.	9″ Merchant Mill	Geared	1926	Illinois Steel Co.	Gary, Ind.	GE
88	450	211–422	600	d.c.	9″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
89	450	400–650	230	d.c.	Rod (1 Stand) No. 2	Direct	1913	American Steel & Wire Co.	Worcester, Mass.	W
90	450	450–600	230	d.c.	12″ Cold Rolls (2 Tandem Stands Roughing)	Geared	1915	Superior Steel Co.	Carnegie, Pa.	W
91	450	450–600	230	d.c.	12″ Cold Rolls (2 Tandem Stands Roughing)	Geared	1915	Superior Steel Co.	Carnegie, Pa.	W
92	450	550–750	230	d.c.	Zinc Strip Mills	Geared	1925	Matthiesen & Hegeler Zinc Co.	LaSalle, Ill.	CW
93	500	130–310	600	d.c.	10″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
94	500	150–225	250	d.c.	12″ Merchant Mill	Direct	1919	Natl. Farming Machinery, Ltd.	Montmagny, P. Q.	W
95	500	150–550	600	d.c.	10″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
96	500	150–300	600	d.c.	10″ Merchant Mill	Direct	1928	Steel Co. of Canada	Hamilton, Ont.	W
97	500	150–450	230	d.c.	Merchant Mill	Direct	1928	Barton Spider Web. Co.	Chicago, Ill.	W
98	500	155–500	250	d.c.	Tyre Mill	Direct	1923	McConway Torley Co.	Pittsburgh, Pa.	W
99	500	175–350	250	d.c.	12″ Merchant Mill	Direct	1926	Pittsburgh Crucible Steel Co.	Midland, Pa.	GE
100	500	175–350	600	d.c.	12″ Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
101	500	175–350	600	d.c.	12″ Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
102	500	175–350	600	d.c.	12″ Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
103	500	180–360	600	d.c.	14″-12″ Skelp Mill	Geared	1926	Wheeling Steel Corp.	Benwood, W. Va.	GE
104	500	200–400	250	d.c.	10″ Cont. Rolling Mill	Coupled	1925	Republic Iron & Steel Co.	Youngstown, Ohio	AC
105	500	200–400	600	d.c.	10″ Merchant Mill	Direct	1928	Steel Co. of Canada	Hamilton, Ont.	W
106	500	210–525	600	d.c.	16″ Strip Mill	Geared	1928	Weirton Steel Co.	Weirton, W. Va.	GE
107	500	220–400	550	d.c.	Brass Mill	Geared	1913	Scoville Mfg. Co.	Waterbury, Conn.	W
108	500	220–400	550	d.c.	Brass Mill	Geared	1913	Scoville Mfg. Co.	Waterbury, Conn.	W
109	500	220–400	550	d.c.	Brass Mill	Geared	1913	Scoville Mfg. Co.	Waterbury, Conn.	W
110	500	220–400	550	d.c.	Brass Mill	Geared	1913	Scoville Mfg. Co.	Waterbury, Conn.	W
111	500	220–400	550	d.c.	Brass Mill	Geared	1913	Scoville Mfg. Co.	Waterbury, Conn.	W
112	500	250–325	230	d.c.	8″ Hoop Mill	Direct	1909	Atlantic Steel Co.	Atlanta, Ga.	GE
113	500	250–500	230	d.c.	9″ Hoop Mill (Finishing)	Direct	1914	Sharon Steel Hoop Co.	Sharon, Pa.	W
114	500	250–350	600	d.c.	9″ Merchant Mill	Direct	1921	Missouri Rolling Mill Co.	St. Louis, Mo.	W
115	500	250–600	250	d.c.	12″–9″ Mill	Coupled	1925	Bethlehem Steel Co.	Johnstown, Pa.	AC
116	500	250–500	600	d.c.	10″ Merchant Mill	Direct	1928	Steel Co. of Canada	Hamilton, Ont.	W
117	500	250–380	600	d.c.	10″ Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, Ohio	W
118	500	267–800	230	d.c.	Hot Merchant Mill	Geared	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
119	500	267–800	230	d.c.	Hot Merchant Mill	Direct	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
120	500	267–800	230	d.c.	Hot Merchant Mill	Direct	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
121	500	267–800	230	d.c.	Hot Merchant Mill	Direct	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
122	500	267–800	230	d.c.	Hot Merchant Mill	Geared	1926	Bourne Fuller Co.	Cleveland, Ohio	GE
123	500	267–800	230	d.c.	Merchant Mill	Geared	1927	Allegheny Steel Co.	Brackenridge, Pa.	GE
124	500	300–450	230	d.c.	Lap Welding Mill	Coupled		Gary Tube Co.	Gary, Ind.	AC
125	500	340–543	600	d.c.	10″ Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, Ohio	W
126	500	400–600	230	d.c.	Hoop Mill	Geared	1920	Atlantic Steel Co.	Atlanta, Ga.	GE
127	500	400–800	230	d.c.	Cold Strip Mill	Geared	1927	Newton Steel Co.	Newton Falls, Ohio	W
128	500	400–800	230	d.c.	Tube Reeling Mill	Geared	1927	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
129	500	400–800	230	d.c.	Tube Reeling Mill	Geared	1927	Jones & Laughlin Steel Co.	Woodlawn, Pa.	GE
130	500	400–800	230	d.c.	14″ Tandem Copper Mill	Geared	1927	Rome Brass & Copper Co.	Rome, N. Y.	GE
131	500	400–800	230	d.c.	14″ Tandem Copper Mill	Geared	1927	Rome Brass & Copper Co.	Rome, N. Y.	GE
132	500	400–800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
133	500	400–800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
134	500	400–800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
135	500	400–800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
136	500	400–800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
137	500	400–800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
138	500	400–800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
139	500	400–800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC

DIRECT CURRENT ADJUSTABLE SPEED DRIVES—Continued

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd By
140	500	400–800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
141	500	400–800	600	d.c.	Cold Strip Mill	Geared	1927	Weirton Steel Co.	Weirton, W. Va.	AC
142	500	400–600	600	d.c.	8″ Strip Mill	Direct	1928	Superior Steel Corp.	Carnegie, Pa.	W
143	500	400–800	230	d.c.	12″-9″ Merchant Mill	Geared	1928	Timken Roller Bearing Co.	Canton, Ohio	AC
144	500	435–722	600	d.c.	10″ Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, Ohio	W
145	500	543–892	600	d.c.	10″ Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, Ohio	W
146	500	667–1000	600	d.c.	10″ Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, Ohio	W
147	550	120–300	250	d.c.	10″ Merchant Mill	Direct	1923	Firth Sterling Steel Co.	McKeesport, Pa.	W
148	550	336–588	600	d.c.	9″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
149	550	420–714	600	d.c.	9″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
150	550	420–714	600	d.c.	9″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
151	600	150–250	575		6″ Hot Strip Mill	Direct	1913	American Steel & Wire Co.	Cleveland, Ohio	GE
152	600	185–470	600	d.c.	10″ Strip Mill	Direct	1926	LacLede Steel Co.	Alton, Ill.	W
153	600	200–300	230	d.c.	9″ Merchant Mill	Direct	1914	United Alloy Steel Corporation	Canton, Ohio	W
154	600	200–300	230	d.c.	9″ (Finishing Train) Mill	Direct	1915	United Alloy Steel Corporation	Canton, Ohio	W
155	600	205–515	600	d.c.	Merchant Mill	Geared	1928	American Steel & Wire Co.	Cleveland, Ohio	W
156	600	205–515	600	d.c.	Merchant Mill	Geared	1928	American Steel & Wire Co.	Cleveland, Ohio	W
157	600	227–454	230	d.c.	12″-9″ Merchant Mill	Geared	1928	Timken Roller Bearing Co.	Canton, Ohio	AC
158	600	225–425	550	d.c.	12″ Hot Strip Mill	Direct	1916	American Steel & Wire Co.	Cleveland, Ohio	GE
159	600	270–635	600	d.c.	10″ Strip Mill	Direct	1926	LacLede Steel Co.	Alton, Ill.	W
160	600	350–700	600	d.c.	Wire Rod Mill	Geared	1928	John A. Roebling's Sons	Trenton, N. J.	GE
161	600	350–788	250	d.c.	10″ Merchant Mill	Geared	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
162	600	350–788	250	d.c.	10″ Merchant Mill	Geared	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
163	600	350–788	250	d.c.	10″ Merchant Mill	Geared	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
164	600	360–440	500	d.c.	Aluminum Mill	Geared	1919	U. S. Aluminum Co.	Marysville, Tenn.	W
165	600	360–440	500	d.c.	Aluminum Mill	Geared	1919	U. S. Aluminum Co.	Marysville, Tenn.	W
166	600	360–440	500	d.c.	Aluminum Mill	Geared	1919	U. S. Aluminum Co.	Marysville, Tenn.	W
167	600	400–800	250	d.c.	18″ Merchant Mill	Geared	1926	Pittsburgh Crucible Steel Co.	Midland, Pa.	GE
168	600	400–800	230	d.c.	Cold Strip Mill	Geared	1927	American Rolling Mill Co.	Ashland, Ky.	W
169	600	400–800	230	d.c.	Cold Strip Mill	Geared	1927	American Rolling Mill Co.	Ashland, Ky.	W
170	600	400–800	230	d.c.	Cold Strip Mill	Geared	1927	American Rolling Mill Co.	Ashland, Ky.	W
171	600	400–800	230	d.c.	Cold Strip Mill	Geared	1927	American Rolling Mill Co.	Ashland, Ky.	W
172	600	400–800	230	d.c.	Cold Strip Mill	Geared	1927	American Rolling Mill Co.	Ashland, Ky.	W
173	600	400–900	250	d.c.	12″ Hoop Mill	Geared	1928	Carnegie Steel Co.	Youngstown, Ohio	W
174	600	400–900	250	d.c.	12″ Hoop Mill	Geared	1928	Carnegie Steel Co.	Youngstown, Ohio	W
175	600	400–900	250	d.c.	12″ Hoop Mill	Geared	1928	Carnegie Steel Co.	Youngstown, Ohio	W
176	600	450–900	600	d.c.	10″ Merchant Mill	Geared	1928	Steel Co. of Canada	Hamilton, Ont.	W
177	600	450–900	600	d.c.	10″ Merchant Mill	Geared	1928	Steel Co. of Canada	Hamilton, Ont.	W
178	650	225–400	600	d.c.	Piercing Mill	Geared	1925	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
179	650	225–400	600	d.c.	Piercing Mill	Geared	1925	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
180	650	225–400	600	d.c.	Piercing Mill	Geared	1925	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
181	700	130–310	600	d.c.	10″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
182	700	130–310	600	d.c.	10″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
183	700	210–660	600	d.c.	10″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
184	700	210–660	600	d.c.	10″ Merchant Mill	Direct	1926	Illinois Steel Co.	Gary, Ind.	GE
185	700	240–450	250	d.c.	9″ Merchant Mill	Direct	1925	Crucible Steel Co.	Pittsburgh, Pa.	GE
186	700	270–520	250	d.c.	10″ Merchant Mill	Direct	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
187	700	300–400	230	d.c.	Lap Welding Mill	Coupled	1923	Gary Tube Co.	Gary, Ind.	AC
188	720-900	160–200	220	d.c.	Wheel Mill	Geared	1906	Bethlehem Steel Co.	Johnstown, Pa.	GE
189	720	395–825	600	d.c.	10″ Strip Mill	Direct	1926	LacLede Steel Co.	Alton, Ill.	W
190	720	480–1000	600	d.c.	10″ Strip Mill	Direct	1926	LacLede Steel Co.	Alton, Ill.	W
191	750	120–210	250	d.c.	14″ Finishing Mill	Coupled	1923	Pittsburgh Crucible Steel Co.	Midland, Pa.	AC
192	750	120–210	250	d.c.	14″ Finishing Mill	Coupled	1923	Pittsburgh Crucible Steel Co.	Midland, Pa.	AC
193	750	150–250	600		14″ Merchant Mill	Direct	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
194	750	190–375	245	d.c.	Pontoon Mill	Coupled	1927	M. W. Kellogg Co.	Jersey City, N. J.	CW
195	750	190–375	245	d.c.	Pontoon Mill	Coupled	1927	M. W. Kellogg Co.	Jersey City, N. J.	CW
196	750	200–600	600	d.c.	10″ Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, Ohio	W
197	750	200–600	600	d.c.	Merchant Mill	Geared	1928	American Steel & Wire Co.	Cleveland, Ohio	W
198	750	225–500	250	d.c.	12″ Hoop Mill	Direct	1928	Carnegie Steel Co.	Youngstown, Ohio	W
199	750	225–500	250	d.c.	12″ Hoop Mill	Direct	1928	Carnegie Steel Co.	Youngstown, Ohio	W
200	750	235–325	230		Piercing Mill	Geared	1914	Pittsburgh Seamless Tube Co.	Beaver Falls, Pa.	GE
201	750	300–600	230	d.c.	Cold Roving Mill	Geared	1924	International Nickel Co.	Huntington, W. Va.	AC
202	750	300–600	230	d.c.	Bliss Cold Roll Drive	Geared	1926	International Nickle Co.	Huntington, W. Va.	AC
203	750	360–600	250	d.c.	10″ Merchant Mill	Direct	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
204	750-750	360–860	600	d.c.	14″ Continuous Mill	Geared	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
205	800	140–510	†600	d.c.	10″ Rod Mill	Direct	1927	American Steel & Wire Co.	Worcester, Mass.	W
206	800	140–510	†600	d.c.	10″ Rod Mill	Direct	1927	American Steel & Wire Co.	Worcester, Mass.	W
207	800	175–350	†600	d.c.	12″ Alloy Bar Mill	Direct	1927	Illinois Steel Co.	S. Chicago, Ill.	GE
208	800	175–350	600	d.c.	12″ Alloy Bar Mill	Direct	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
209	800	175–350	600	d.c.	12″ Alloy Bar Mill	Direct	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
210	800	250–300	500	d.c.	Piercing Mill	Direct	1912	Pittsburgh Steel Products Co.	Monessen, Pa.	W
211	800	200–300	500	d.c.	Piercing Mill	Rope	1912	Pittsburgh Steel Products Co.	Monessen, Pa.	W
212	800	200–400	600		14″ Hot Strip Mill	Direct	1920	Trumbull Steel Co.	Warren, Ohio	GE
213	800	200–400	250	d.c.	9″ 7 Stand Mill	Coupled	1926	Crucible Steel Co. of America	Harrison, N. J.	AC
214	800	200–415	600	d.c.	12″ Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	GE
215	800	200–415	600	d.c.	12″ Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	GE
216	800	200–415	600	d.c.	12″ Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	GE
217	800	200–600	500	d.c.	10″ Merchant Rod & Strip Mill	Geared	1927	Ford Motor Co.	Detroit, Mich.	W
218	800	210–315	575		6″ Hot Strip Mill	Direct	1907	American Steel & Wire Co.	Cleveland, Ohio	GE
219	800	220–440	600	d.c.	12″ Alloy Bar Mill	Direct	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
220	800	220–440	600	d.c.	12″ Alloy Bar Mill	Direct	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
221	800	220–440	600	d.c.	12″ Alloy Bar Mill	Direct	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
222	800	231–462	600		14″ Hot Strip Mill	Direct	1920	Trumbull Steel Co.	Warren, Ohio	GE
223	800	240–480	600	d.c.	12″ Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	GE
224	800	240–500	600	d.c.	Rod Mill	Direct	1928	Sheffield Steel Corp.	Kansas City, Mo.	W
225	800	250–500	230	d.c.	14″ and 9″ Hoop Mill	Direct	1914	Sharon Steel Hoop Co.	Sharon, Pa.	W
226	800	256–512	600		14″ Hot Strip Mill	Direct	1920	Trumbull Steel Co.	Warren, Ohio	GE
227	800	250–750	600	d.c.	14″ Hot Strip Mill	Direct	1927	Trumbull Steel Co.	Warren, Ohio	GE
228	800	260–390	575		6″ Hot Strip Mill	Direct	1907	American Steel & Wire Co.	Cleveland, Ohio	GE
229	800	275–550	600		14″ Hot Strip Mill	Direct	1920	Trumbull Steel Co.	Warren, Ohio	GE
230	800	275–550	700		12″ Merchant Mill	Geared	1925	Penn Seaboard Steel Co.	New Castle, Del.	GE
231	800	275–550	700		12″ Merchant Mill	Geared	1925	Penn Seaboard Steel Co.	New Castle, Del.	GE
232	800	275–550	700		9″ Merchant Mill	Direct	1925	Penn Seaboard Steel Co.	New Castle, Del.	GE
233	800	350–600	230	d.c.	Band Mill	Direct	1926	Sharon Steel Hoop Co.	Sharon, Pa.	CW
234	800	350–600	230	d.c.	Band Mill	Direct	1926	Sharon Steel Hoop Co.	Sharon, Pa.	CW
235	800	350–750	600		Cont. Merchant Mill	Direct	1925	Inland Steel Co.	Indiana Harbor, Ind.	GE
236	800	350–700	600	d.c.	20″ Merchant Mill (Breakdown)	Geared	1921	Driver Harris Co.	Harrison, N. J.	W
237	800	350–790	600	d.c.	13″ Skelp Mill	Geared	1928	National Tube Co.	McKeesport, Pa.	GE
238	800	350–790	600	d.c.	13″ Skelp Mill	Geared	1928	National Tube Co.	McKeesport, Pa.	GE
239	800	360–440	500	d.c.	Aluminum Mill	Geared	1919	U. S. Aluminum Co.	Marysville, Tenn	W
240	800	360–440	500	d.c.	Aluminum Mill	Geared	1919	U. S. Aluminum Co.	Marysville, Tenn.	W
241	800	370–400	650	d.c.	Aluminum Mill	Direct	1917	U. S. Aluminum Co.	Niagara Falls, N. Y.	W
242	800	370–400	650	d.c.	Aluminum Mill	Direct	1919	U. S. Aluminum Co.	Niagara Falls, N. Y.	W
243	800	400–600	600	d.c.	16″ Merchant Mill	Geared	1921	Missouri Rolling Mill Co.	St. Louis, Mo.	W
244	800	410–720	230	d.c.	16″ Merchant Mill (Rougher)	Geared	1923	Timken Roller Bearing Co.	Canton, Ohio	W
245	800-363	320–706	600		10″ Rod Mill	Geared	1922	Wheeling Steel Corp.	Portsmouth, Ohio	GE

DIRECT CURRENT ADJUSTABLE SPEED DRIVES—Continued

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
246	800-363	320-706	600		10" Rod Mill	Geared	1922	Wheeling Steel Corp.	Portsmouth, Ohio	GE
247	300-363	320-706	600		10" Rod Mill	Geared	1922	Wheeling Steel Corp.	Portsmouth, Ohio	GE
248	800	400-800	600	d.c.	Rod & Merchant Mill	Geared	1928	Atlantic Steel Co.	Atlanta, Ga.	GE
249	800	425-875	250	d.c.	12" Hoop Mill	Direct	1928	Carnegie Steel Co.	Youngstown, Ohio	W
250	800	425-875	250	d.c.	12" Hoop Mill	Direct	1928	Carnegie Steel Co.	Youngstown, Ohio	W
251	800	469-750	600	d.c.	Wire Rod Mill	Geared	1928	John A. Roebling's Sons	Trenton, N. J.	GE
252	800	469-750	600	d.c.	Wire Rod Mill	Geared	1928	John A. Roebling's Sons	Trenton, N. J.	GE
253	800	510-870	250	d.c.	10" Merchant Mill	Direct	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
254	800	535-750	600	d.c.	10" Wire Rod Mill	Geared	1926	American Steel & Wire Co.	Worcester, Mass.	W
255	800	535-750	600	d.c.	10" Wire Rod Mill	Geared	1926	American Steel & Wire Co.	Worcester, Mass.	W
256	800	760-1050	250	d.c.	10" Merchant Mill	Direct	1928	Tennessee Coal, Iron & R. R. Co.	Fairfield, Ala.	CW
257	850	250-500	250	fd.c.	10" Rod Mill	Direct	1927	Washburn Wire Co.	Phillipsdale, R. I.	W
258	900	150-300	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
259	900	425-640	250	d.c.	12"-10" Mill	Coupled	1925	Bethlehem Steel Co.	Johnstown, Pa.	AC
260	975-375	650-250	600	d.c.	Rod (Roughing) Mill	Geared	1922	Atlantic Steel Co.	Atlanta, Ga.	W
261	975-510	865-450	600	d.c.	Rod (Finishing) Mill	Direct & Belted	1922	Atlantic Steel Co.	Atlanta, Ga.	W
262	1000	145-327	600	d.c.	13" Skelp Mill	Direct	1928	National Tube Co.	McKeesport, Pa.	GE
263	1000	190-427	600	d.c.	13" Skelp Mill	Direct	1928	National Tube Co.	McKeesport, Pa.	GE
264	1000	200-480	250	d.c.	12"-9" Mill	Geared	1925	Bethlehem Steel Co.	Johnstown, Pa.	AC
265	1000	200-480	250	d.c.	12"-9" Mill	Geared	1925	Bethlehem Steel Co.	Johnstown, Pa.	AC
266	1000-2000	200-400-600	250	d.c.	12"-10" Gautier Mill	Geared	1925	Bethlehem Steel Co.	Johnstown, Pa.	AC
267	1000	210-510	230	d.c.	Bar Mill	Geared	1925	Donner Steel Co.	Buffalo, N. Y.	W
268	1000	200-600	600	d.c.	10" Merchant Mill	Geared	1925	McKinney Steel Co.	Cleveland, Ohio	W
269	1000	290-500	600	d.c.	9" Merchant Mill	Geared	1926	Illinois Steel Co.	Gary, Indiana	GE
270	1000	300-400	230	d.c.	Lap Welding Mill			Gary Tube Co.	Gary, Ind.	AC
271	1000	350-700	600	d.c.	12" Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
272	1000	350-700	600	d.c.	12" Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
273	1000	350-700	600	d.c.	12" Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
274	1000	350-700	600	d.c.	12" Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
275	1000	350-700	600	d.c.	12" Alloy Bar Mill	Geared	1926	Illinois Steel Co.	So. Chicago, Ill.	GE
276	1000	400-800	230	d.c.	10" Merchant Mill	Geared	1928	Bourne Fuller Co.	Cleveland, Ohio	GE
277	1000	450-900	600	d.c.	10" Merchant Mill	Geared	1928	Steel Co. of Canada	Hamilton, Ont.	W
278	1000	518-800	250	d.c.	20" Merchant Mill	Geared	1919	Natl. Farming Machinery Ltd.	Montmagny, P. Q.	W
279	1100	214-320	600	d.c.	12" Skelp Mill	Direct	1926	Bethlehem Steel Co.	Sparrows Point, Md.	W
280	1100	240-382	600	d.c.	12" Skelp Mill	Direct	1926	Bethlehem Steel Co.	Sparrows Point, Md.	W
281	1200	125-275	600	d.c.	10" Strip Mill	Direct	1928	American Steel & Wire Co.	Cleveland, Ohio	W
282	1200	150-250	230		12" Merchant Mill	Direct	1920	Timken Roller Bearing Co.	Canton, Ohio	GE
283	1200	160-320	250	d.c.	12" Merchant Mill	Direct	1926	Pittsburgh Crucible Steel Co.	Midland, Pa.	GE
284	1200	200-400	230	d.c.	14" Band Mill	Direct	1926	Sharon Steel Hoop Co.	Sharon, Pa.	W
285	1200	200-400	230	d.c.	14" Band Mill	Direct	1926	Sharon Steel Hoop Co.	Sharon, Pa.	W
286	1200	250-500	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
287	1200	250-500	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
288	1200	300-600	230	d.c.	12"-9" Merchant Mill	Geared	1928	Timken Roller Bearing Co.	Canton, Ohio	AC
289	1200	300-500	600	d.c.	10" Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	W
290	1200	520-575	230	d.c.	Rod Mill	Direct	1928	Gulf States Steel Co.	Alabama City, Ala.	W
291	1250	103-253	600	d.c.	Strip Mill	Direct	1928	Sharon Steel Hoop Co.	Sharon, Pa.	GE
292	1250	137-326	600	d.c.	Strip Mill	Direct	1928	Sharon Steel Hoop Co.	Sharon, Pa.	GE
293	1250	175-400	230	d.c.	Rod Mill	Direct	1915	United Alloy Steel Corp.	Canton, Ohio	W
294	1250	175-350	600		14" Hot Strip Mill	Geared	1920	Trumbull Steel Co.	Warren, Ohio	GE
295	1250	175-350	600		14" Hot Strip Mill	Geared	1920	Trumbull Steel Co.	Warren, Ohio	GE
296	1250	175-413	600	d.c.	Strip Mill	Direct	1928	Sharon Steel Hoop Co.	Sharon, Pa.	GE
297	1250	200-500	600	d.c.	Strip Mill	Direct	1928	Sharon Steel Hoop Co.	Sharon, Pa.	CE
298	1250	250-580	600	d.c.	Strip Mill	Direct	1928	Sharon Steel Hoop Co.	Sharon, Pa.	GE
299	1250	312-625	600	d.c.	Strip Mill	Direct	1928	Sharon Steel Hoop Co.	Sharon, Pa.	GE
300	1250	300-550	500	d.c.	10" Merchant Mill	Direct	1927	Ford Motor Co..	Detroit, Mich.	W
301	1400	450-550	500	d.c.	12" Spring Mill	Coupled	1926	Ford Motor Co., Fordson Plant	Detroit, Mich.	AC
302	1500	50-80	600		Cont. Merchant Mill	Direct	1925	Inland Steel Co.	Indiana Harbor, Ind.	GE
303	1500	100-125	220	d.c.	Light Rail Mill	Direct	1905	Carnegie Steel Co.	Bessemer, Pa.	W
304	1500	100-125	220	d.c.	Light Rail Mill	Direct	1905	Carnegie Steel Co.	Bessemer, Pa.	W
305	1500	100-150	600		14" Merchant Mill	Direct	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
306	1500	125-250	230	d.c.	14" Band Mill	Direct	1914	Sharon Steel Hoop Co.	Sharon, Pa.	W
307	1500	125-250	240	d.c.	Strip Mill	Geared	1922	West Leechburg Steel Co.	Leechburg, Pa.	W
308	1500	125-250	240	d.c.	Strip Mill	Geared	1922	West Leechburg Steel Co.	Leechburg, Pa.	W
309	1500	137-275	600	d.c.	Rod Mill	Direct	1928	Sheffield Steel Corp.	Kansas City, Mo.	W
310	1500	150-300	250	d.c.	18-14" Structural Mill	Direct	1924	Bethlehem Steel Corp.	Johnstown, Pa.	AC
311	1500	150-300	250	d.c.	18-14" Structural Mill	Direct	1924	Bethlehem Steel Corp.	Johnstown, Pa.	AC
312	1500	198-100	600	d.c.	10" Strip Mill	Rope & Direct	1926	LacLede Steel Co.	Alton, Ill.	W
313	1500	200-400	600	d.c.	20"-16" Hot Strip Mill	Geared	1925	Acme Steel Goods Co.	Riverdale, Ill.	W
314	1500	200-300	600		10" Merchant Mill	Direct	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
315	1500	200-600	600	d.c.	Rod Mill	Geared	1928	Sheffield Steel Corp.	Kansas City, Mo.	W
316	1500	200-500	600	d.c.	Seamless Tube Mill	Direct	1928	National Tube Co.	Gary, Ind.	AC
317	1500	200-500	600	d.c.	Seamless Tube Mill	Direct	1928	National Tube Co.	Gary, Ind.	AC
318	1500	220-440	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
319	1500	250-565	600	d.c.	13" Skelp Mill	Direct	1928	National Tube Co.	McKeesport, Pa.	GE
320	1500	280-420	600		20" Hot Strip Mill	Geared	1922	Otis Steel Co.	Cleveland, Ohio	GE
321	1500	280-420	600		20" Hot Strip Mill	Geared	1922	Otis Steel Co.	Cleveland, Ohio	GE
322	1500	280-420	600		20" Hot Strip Mill	Geared	1922	Otis Steel Co.	Cleveland, Ohio	GE
323	1500	315-630	600	d.c.	13" Skelp Mill	Direct	1928	National Tube Co.	McKeesport, Pa.	GE
324	1500	325-450	600	d.c.	10" Strip -Mill	Direct	1928	Superior Steel Corp.	Carnegie, Pa.	W
325	1500	450-550	600		Rod Mills Nos. 16 to 18	Direct	1925	Colorado Fuel & Iron Co.	Minnequa, Colo.	GE
326	1500	470-510	230	d.c.	Rod Mill	Direct	1923	John A. Roebling Sons	New York, N. Y.	W
327	1600	210-420	525	d.c.	Rod Mill	Geared	1913	Steel Co. of Canada	Hamilton, Ont.	W
328	1600	210-420	525	d.c.	Rod Mill	Geared	1913	Steel Co. of Canada	Hamilton, Ont.	W
329	1650	112 5-270	750	d.c.	Slabbing Mill	Direct	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
330	1700	90-140	600		14" Mill	Direct	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
331	1700	90-205	600		14" Mill	Direct	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
332	1700	250-500	250	d.c.	12"-10" Mill	Geared	1925	Bethlehem Steel Co.	Johnstown, Pa.	AC
333	1750	100-200	500	d.c.	12" Spring Mill	Coupled	1926	Ford Motor Co., Fordson Plant	Detroit, Mich.	AC
334	1750	150-300	230	d.c.	18-14" Structural Mill	Direct	1924	Bethlehem Steel Corp.	Lackawanna, N. Y.	AC
335	1800	115-230	600		20" Hot Strip Mill	Direct	1922	Otis Steel Co.	Cleveland, Ohio	GE
336	1800	115-230	600		20" Hot Strip Mill	Direct	1922	Otis Steel Co.	Cleveland, Ohio	GE
337	1800	115-230	600		20" Hot Strip Mill	Direct	1922	Otis Steel Co.	Cleveland, Ohio	GE
338	1800	125-250	600	d.c.	20"-16" Hot Strip Mill	Direct	1925	Acme Steel Goods Co.	Riverdale, Ill.	W
339	1800	125-250	600	d.c.	20"-16" Hot Strip Mill	Direct	1925	Acme Steel Goods Co.	Riverdale, Ill.	W
340	1800	150-300	250	d.c.	18-14" Structural Mill	Direct	1924	Bethlehem Steel Co.	Lackawanna, N. Y.	AC
341	1800	165-350	240	d.c.	Strip Mill	Direct	1922	West Leechburg Steel Co.	Leechburg, Pa.	W
342	1800	165-350	240	d.c.	Strip Mill	Direct	1922	West Leechburg Steel Co.	Leechburg, Pa.	W
343	1800	185-370	600	d.c.	20"-16" Hot Strip Mill	Geared	1925	Acme Steel Goods Co.	Riverdale, Ill.	W
344	1800	185-370	600	d.c.	20"-16" Hot Strip Mill	Direct	1925	Acme Steel Goods Co.	Riverdale, Ill.	W
345	1800	185-370	600	d.c.	20"-16" Hot Strip Mill	Direct	1925	Acme Steel Goods Co.	Riverdale, Ill.	W
346	1800	200-400	600		Cont. Merchant Mill	Geared	1925	Inland Steel Co.	Indiana Harbor, Ind.	GE
347	1800	275-550	600	d.c.	12" Skelp Mill	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	W
348	1800	275-550	600	d.c.	12" Skelp Mill	Geared	1926	Bethlehem Steel Co.	Sparrows Point, Md.	W
349	1800	350-640	500	d.c.	18" Rougher Mill	Geared	1926	Pittsburgh Crucible Steel Co.	Midland ,Pa.	AC
350	1800	475-550	550	d.c.	Merchant Mill	Direct	1928	Pittsburgh Steel Co.	Monessen, Pa.	CW
351	1800	550-650	250	d.c.	22" Merchant Mill	Geared	1925	Crucible Steel Co.	Pittsburgh, Pa.	GE

DIRECT CURRENT ADJUSTABLE SPEED DRIVES—Continued

No.	Horse Power	R.P.M.	Voltage	Cycle	Type and Size of Mill	Method of Drive	Date of Purchase	Name of Plant	Location	Mfgd. By
352	1850	575–221	600	d.c.	Rod Mill	Direct & Belted	1922	Atlantic Steel Co.	Atlanta, Ga.	W
353	2000	85–165	600		21″ Cont. Sheet Bar and Skelp Mill	Geared	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	GE
354	2000	85–165	600		21″ Cont. Sheet Bar and Skelp Mill	Geared	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	GE
355	2000	85–165	600		21″ Cont. Sheet Bar and Skelp Mill	Geared	1925	Youngstown Sheet & Tube Co.	Indiana Harbor, Ind.	GE
356	2000	134–275	600	d.c.	10″ Merchant Mill	Direct	1925	McKinney Steel Co.	Cleveland, Ohio	W
357	2000	137½–275	500	d.c.	10″ Merchant-Rod & Strip Mill	Direct	1927	Ford Motor Co.	Detroit, Mich.	W
358	2000	200–400	600	d.c.	Hot Strip Mill	Geared	1926	Columbia Steel Co.	Butler, Pa.	GE
359	2000	200–400	600	d.c.	Hot Strip Mill	Geared	1926	Columbia Steel Co.	Butler, Pa.	GE
360	2000	200–400	600	d.c.	Hot Strip Mill	Geared	1926	Columbia Steel Co.	Butler, Pa.	GE
361	2000	200–400	600	d.c.	Hot Strip Mill	Geared	1926	Columbia Steel Co.	Butler, Pa.	GE
362	2000	200–400	600	d.c.	14″-12″ Skelp Mill	Geared	1926	Wheeling Steel Co.	Benwood, W. Va.	GE
363	2000	200–400	600	d.c.	14″-12″ Skelp Mill	Geared	1926	Wheeling Steel Co.	Benwood, W. Va.	GE
364	2000	200–400	600	d.c.	14″-12″ Skelp Mill	Geared	1926	Wheeling Steel Co.	Benwood, W. Va.	GE
365	2000	200–400	600	d.c.	Strip Sheet Mill	Direct	1926	Weirton Steel Co.	Weirton, W. Va.	GE
366	2000	200–400	600	d.c.	Strip Sheet Mill	Direct	1926	Weirton Steel Co.	Weirton, W. Va.	GE
367	2000	200–350	600	d.c.	14″ Strip Mill	Direct	1928	Superior Steel Corp.	Carnegie, Pa.	W
268	2000	230–460	600	d.c.	Merchant Mill	Direct	1925	International Harvester Co.	Chicago, Ill.	W
369	2000	230–460	600	d.c.	Merchant Mill	Direct	1925	International Harvester Co.	Chicago, Ill.	W
370	2000	230–460	600	d.c.	Merchant Mill	Direct	1925	International Harvester Co.	Chicago, Ill.	W
371	2000	230–460	600	d.c.	Sheet Mill	Geared	1926	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
372	2000	230–460	600	d.c.	10″ Rod Mill	Geared	1927	American Steel & Wire Co.	Worcester, Mass.	W
373	2000–1700	210–680	600		14″ Mill	Direct	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
374	2000	260–800	600		14″ Mill	Direct	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
375	2000	250–465	240	d.c.	22″ Bar Mill	Geared	1928	Timken Roller Bearing Co.	Canton, Ohio	GE
376	2000	275–550	600	d.c.	10″ Skelp Mill	Geared	1928	Youngstown Sheet & Tube Co.	Youngstown, Ohio	GE
377	2000	300–500	600	d.c.	Bar Plate Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
378	2000	300–500	600	d.c.	Bar Plate Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio.	W
379	2000	300–500	600	d.c.	Bar Plate Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
380	2000	315–500	600	d.c.	10″ Merchant Mill	Geared	1926	Illinois Steel Co.	Gary, Ind.	GE
381	2100	150–310	600		14″ Mill	Direct	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
382	2100–1600	150–460	600		14″ Mill	Direct	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
383	2500	160–320	600	d.c.	Continuous Sheet Mill	Geared	1926	American Sheet & Tinplate Co.	Gary, Ind.	W
384	2500	160–320	600	d.c.	Continuous Sheet Mill	Geared	1926	American Sheet & Tinplate Co.	Gary Ind.	W
385	2500	160–320	600	d.c.	Continuous Sheet Mill	Geared	1926	American Sheet & Tinplate Co.	Gary, Ind.	W
386	2500	160–320	600	d.c.	Continuous Sheet Mill	Geared	1926	American Sheet & Tinplate Co.	Gary, Ind.	W
387	2500	160–320	600	d.c.	Continuous Sheet Mill	Geared	1926	American Sheet & Tinplate Co.	Gary, Ind.	W
388	2500	160–320	600	d.c.	Continuous Sheet Mill	Geared	1926	American Sheet & Tinplate Co.	Gary, Ind.	W
389	2500	180–450	600	d.c.	Wire Rod Mill	Geared	1928	John A. Roebling Sons	Trenton, N. J.	GE
390	2500	200–400	600	d.c.	Strip Sheet Mill	Direct	1926	Weirton Steel Co.	Weirton, W. Va.	GE
391	2500	200–400	600	d.c.	Strip Sheet Mill	Direct	1926	Weirton Steel Co.	Weirton, W. Va.	GE
392	2500	200–400	600	d.c.	Strip Sheet Mill	Direct	1926	Weirton Steel Co.	Weirton, W. Va.	GE
393	2300	200–400	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
394	2600	320–275	600	d.c.	26″ & 21″ Cont. Mill	Direct	1926	Bethlehem Steel Co.	Sparrows Point, Md.	GE
395	2870–1435	200–400	600		10″ Rod Mill	Geared	1922	Wheeling Steel Corp.	Portsmouth, Ohio	GE
396	3000	40–100	600	d.c.	Piercing Mill	Direct	1925	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
397	3000	125–200	600	d.c.	Piercing Mill	Direct	1925	Youngstown Sheet & Tube Co.	Youngstown, Ohio	W
398	3000	150–300	250	d.c.	18-14″ Structural Mill	Direct	1924	Bethlehem Steel Corp.	Johnstown, Pa.	AC
399	3000	150–300	250	d.c.	18-14″ Structural Mill	Direct	1924	Bethlehem Steel Corp.	Johnstown, Pa.	AC
400	3000	180–370	600	d.c.	10″ Wire Rod Mill	Geared	1926	American Steel & Wire Co.	Worcester, Mass.	W
401	3000	180–360	600	d.c.	Hot Strip Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
402	3000	170–360	600	d.c.	Hot Strip Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
403	3000	180–360	600	d.c.	Hot Strip Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
404	3000	180–360	600	d.c.	Hot Strip Mill	Geared	1927	American Rolling Mill Co.	Middletown, Ohio	W
405	3000	200–360	600		14″ Mill	Direct	1924	Jones & Laughlin Steel Corp.	Woodlawn, Pa.	GE
406	3000	200–400	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
407	3000	200–400	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
408	3000	200–400	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
409	3000	200–400	600	d.c.	Wide Strip Mill	Geared	1928	Wheeling Steel Corp.	Steubenville, Ohio	GE
410	3000	325–485	600	d.c.	24″ Structural Mill	Geared	1923	Phoenix Iron Co.	Phoenixville, Pa.	W
411	3200	50–120	700	d.c.	28″ Structural Mill	Direct	1915	Inland Steel Co.	Indiana Harbor, Ind	W
412	3500	150–300	230	d.c.	18-14″ Structural Mill	Direct	1924	Bethlehem Steel Corp.	Lackawanna, N. Y.	AC
413	3600	150–300	250	d.c.	18-14″ Structural Mill	Direct	1924	Bethlehem Steel Co.	Lackawanna, N. Y.	AC
414	4000	250–465	240	d.c.	Piercing Mill	Geared	1928	Timken Roller Bearing Co.	Canton, Ohio	GE
415	4500	67.5–110	500		14″ Merchant Mill	Direct	1923	Ford Motor Co.	Detroit, Mich	GE
416	4500	120–255	750	d.c.	Universal Skelp Mill	Coupled	1925	Gary Tube Co.	Gary, Ind.	AC
417	4500	150–450	600	d.c.	Strip Mill	Geared	1928	Sharon Steel Hoop Co.	Sharon, Pa.	GE

ELECTRICALLY OPERATED CRANE STATISTICS, 1928

ELECTRIC OVERHEAD TRAVELING CRANES, CHARGERS, HOISTS, PURCHASED BY IRON AND STEEL INDUSTRY

Table No. 1

Trend of Bearing Construction

Number of Cranes Purchased	Cranes Tonnage	Completely Equipped with Anti-friction bearings	Partially Equipped	Sleeve Bronze Bearings, Etc.
2	1	0	1	1
4	3	0	0	4
1	3½	0	0	1
29	5	10	3	16
1	6	0	0	1
5	7½	4	0	1
1	8	0	0	1
56	10	25	5	26
35	15	25	3	7
7	20	5	0	2
9	25	4	0	5
2	30	0	0	2
2	35	2	0	0
1	40	1	0	0
4	50	0	1	3
2	60	1	0	1
4	75	0	0	4
1	80	0	0	1
2	100	0	2	0
4	125	4	0	0
4	150	0	0	4
1	160	0	0	1
1	165	1	0	0
3	175	0	0	3
7	200	0	6	1
188		82	21	85

Table No. 2

Type of Cranes Purchased	Total
Standard Cranes	68
Magnet Handling Cranes	15
Soaking Pit Cranes	4
Power House Cranes	3
O. H. Charger Cranes	6
Double Drum, Double Trolley, and Double Hook Cranes	9
Bloom Charger Cranes	2
Special Charger Crane	1
Pipe Charger Crane	1
Gantry Cranes	3
Ladle Cranes	21
Ingot Handling Crane	1
Stationary Hoist Cranes	4
Quarry Hoist Crane	1
Bucket Cranes	5
Trolley Cranes	5
Hot Metal Crane	1
Stripper Cranes	6
Tongs	3
Total	159
Unclassified Cranes	29
Complete Total	188

COMPILATION

Total Cranes purchased, 188.

Cranes completely equipped with anti-friction bearings	82
Cranes partially equipped with anti-friction bearings	21
Cranes equipped with sleeve-bronze bearings, etc.	85
Total	188

Cranes equipped with Spur Gears	137
Worm gear reductions	23
Spur and Worm Gears	5
Not Classified	23
Total	188

598 Motors furnished for 188 cranes. Total crane tonnage purchased, 6,085. Approximate value, $6,000,000.

Items of Interest

Mr. W. T. Snyder, an active member of this Association and one of the Past Presidents, has been made Superintendent of all classes of Power at the National Tube Co., McKeesport, Pa. Mr. Snyder was formerly Electrical Superintendent of this plant.

Mr. R. S. Shoemaker, formerly Superintendent of Maintenance at American Rolling Mill plants at Middletown, Ohio, has been appointed Superintendent in charge of the Blooming, Bar and New Strip Mills at the American Rolling Mill plants at Middletown, Ohio. Mr. Shoemaker has been an active participant in the affairs of the Association of Iron and Steel Electrical Engineers and is one of the Past Presidents of the Association.

Mr. John D. Scully, formerly Assistant Electrical Superintendent at National Tube Co., McKeesport, Pa., has been appointed Electrical Superintendent at this plant. Mr. Scully has been an active member of Association for the past ten years and has taken an active interest in all affairs of the Association.

Mr. W. P. Chandler, Jr., formerly with the American Heat Economy Bureau, Pittsburgh, Pa., has resigned to accept a position as Special Engineer, with the Blaw Knox Co., at Blawknox, Pa. Mr. Chandler has been an active member of the Combustion Engineering Division of the A. I. & S. E. E. and is one of the past chairmen of this Division.

Mr. R. C. McDaniel, formerly with the Bussmann Mfg. Co., resigned to accept a position with the Keystone Lubricating Co., and is located at Pittsburgh, Pa. He will have direct charge of all steel mill business.

Mr. Arthur W. Steel, formerly in charge in Steam Power Division of American Rolling Mill Co., at Middletown, Ohio, has been appointed Superintendent of Maintenance, succeeding Mr. R. S. Shoemaker.

Mr. Strickland Kneass, formerly with Costello Engineering Co., has accepted a position as Chief Engineer in charge of A. M. Byers Co. plants to be located at Ambridge, Pa.

Mr. Russell Sheperd, formerly with Lebanon Iron Co., has accepted a position as Electrical Superintendent with the A. M. Byers Co. Mr. Sheperd will be located at Ambridge, Pa.

Mr. Karl H. Marsh, formerly with the Wickwire Spencer Co., at Buffalo, New York, is now located with British Empire Steel Co., Sydney, Nova Scotia, Canada.

GEARS & FORGINGS, INC. EXPANDS

Gears & Forgings, Inc. is now completing a three story addition to its Cleveland plant. This addition, which provides approximately twenty thousand square feet of additional manufacturing space, is primarily in the interest of the company's production of Speed Reducers. A very much enlarged program of the application of Speed Reducers to all the varied industrial uses is planned for the future.

NEW P & H EXCAVATOR

One of the latest development by the Harnischfeger Corporation is the new Model 900 full revolving excavator. This machine varies in capacity from 2 to 3½ cu. yds. as a shovel or dragline depending upon boom length.

The machine is equipped with a 180 H.P., 4 cycle, solid injection, full Diesel type motor and incorporates the standard P & H design in that it travels on full corduroys and may be convertible with any of eight different attachments.

This new excavator has been built to extend the present line of P & H excavating equipment from ½ yd. capacity, through to 3½ yds., thus making available a complete line of standard size material handling equipment.

NEW WESTINGHOUSE BOOKLET

The Westinghouse Electric & Mfg. Co., at East Pittsburgh, Pa., have issued a new booklet entitled Engineering Achievements. Out of the many achievements for the year a few are presented in this booklet as examples of the trends of the electrical industry. Copy sent to all interested parties on request.

NEW CONDIT CORPORATION BULLETIN

The Condit Electrical Mfg. Corp. of Boston, Mass., have a new booklet on New Developments in Electrical Protective Devices. It describes some of the major developments which Condit have placed on the market during the past year. Your copy is ready for you.

NEW BOOKLET OF THOMPSON ELEC. CO.

When Waste Aids Prosperity is the title of an interesting booklet written by Allison J. Thompson. Copy of booklet can be secured by writing to The Thompson Electric Company, 1438 West Ninth street, Cleveland, O.

FIRM NAME CHANGED

The firm name of W. J. Jeandron, makers of Le Carbone carbon brushes, has been changed to Le Carbone Company with W. J. Jeandron Managing Director, having offices at Hoboken Factory Terminal Building F, Fifteenth street, Hoboken, N. J.

NEW BOOKLET BY ELECTRIC MACHINERY COMPANY

A new booklet is being distributed by Electric Machinery Co. of Minneapolis, Minn. The subject of power factor correction with Capacitors (Static Condensers) is discussed. The book gives a non-technical explanation of power factor and shows when and how to apply Capacitors to reduce electric power cost. Booklet sent on request.

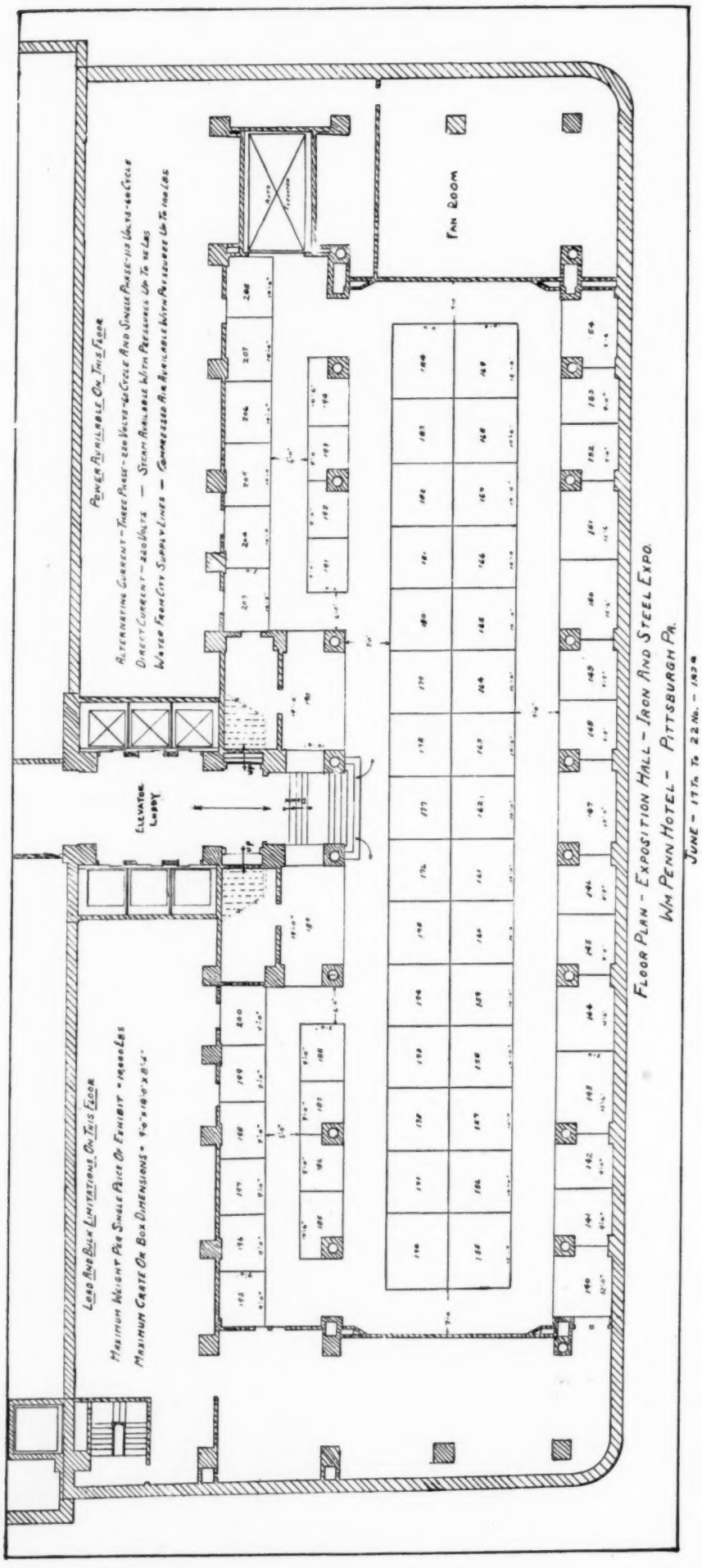
NEW ALLIS CHALMERS BULLETIN

The Allis Chalmers Company, Milwaukee, Wis., have issued a new bulletin No. 1087F. This bulletin describes a line of "Large Polyphase Induction Motors" and their various applications. Copy on request.

(Continued on Page 70)

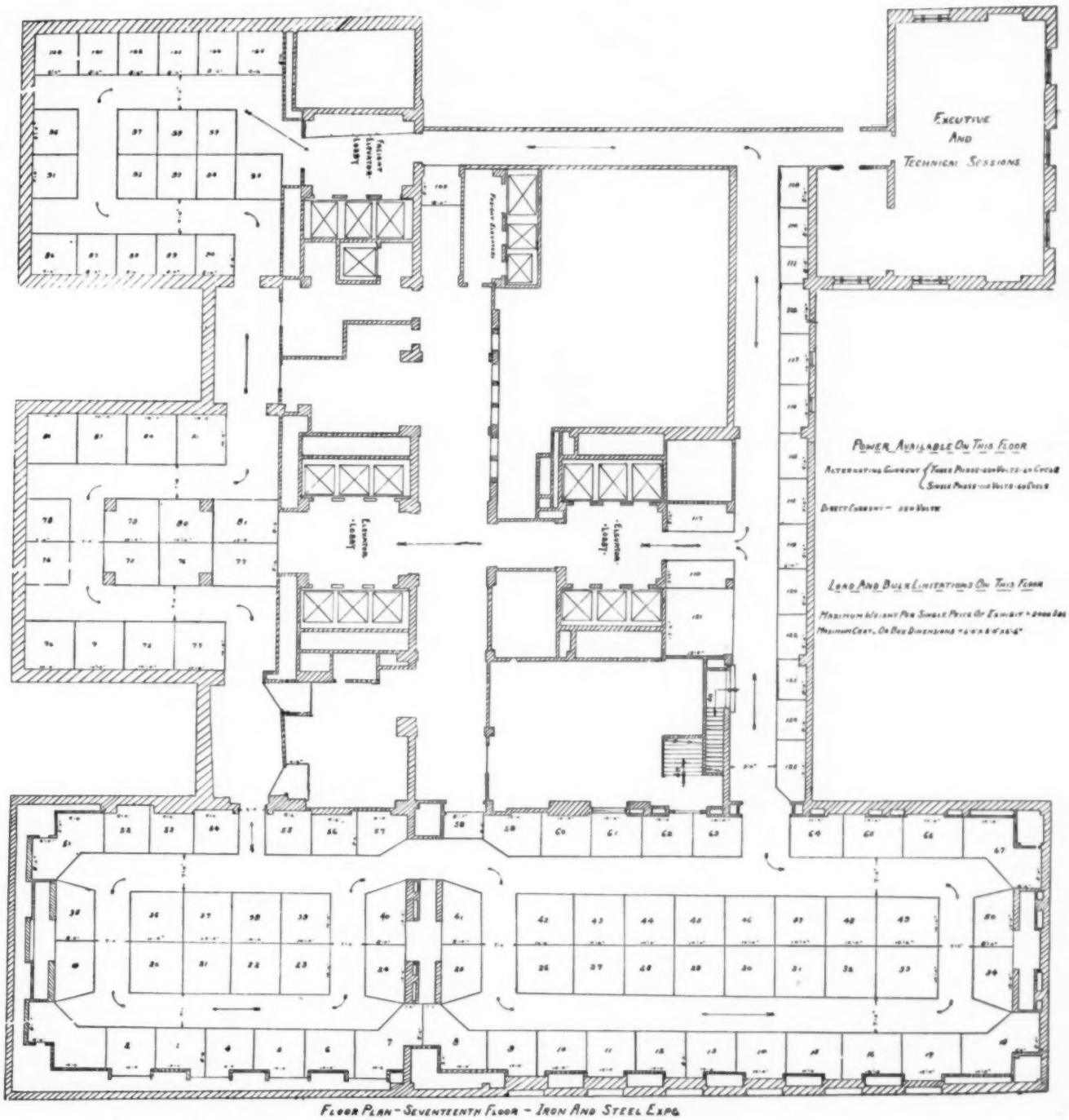
FLOOR PLAN

First Floor


FAN ROOM
ELEVATOR LOBBY
POWER AVAILABLE ON THIS FLOOR
LOAD AND BULK LIMITATIONS ON THIS FLOOR
FLOOR PLAN - EXPOSITION HALL - IRON AND STEEL EXPO.
WM PENN HOTEL - PITTSBURGH PA.
JUNE - 17TH TO 22ND, - 1929

FLOOR PLAN

Seventeenth Floor



Floor Plan - Seventeenth Floor - Iron And Steel Expo.
Wm. Penn Hotel - Pittsburgh Pa - June - 17th To 22nd - 1929.

NEW FURNACES BY CHAPMAN STEIN CO.

The Continental Steel Corporation, Kokomo, Ind., have recently placed an order with the Chapman Stein Co. for a battery of four holes of recuperative soaking pits. These pits are to be fired with producer gas and will be of the same type of pits as installed at the American Tube & Stamping Plant, Bridgeport, Conn. The Donner Steel Co. at Buffalo, have been using this type of pit for approximately two years.

The John A. Roebling's Sons Co., Trenton, N. J., have just placed an order with the Chapman Stein Co. for two batteries of four holes each of recuperative soaking pits, together with two Chapman Full Mechanical Gas Producers, coal handling equipment, building, and all necessary flues. This will make a total of twenty-one holes of recuperative soaking pits in operation in this country.

NEW STANDARD UNDERGROUND CABLE BULLETINS

The Standard Underground Cable Co., division of General Cable Corporation of Pittsburgh, Pa., have issued three new bulletins—Junction and Joint Boxes, Indoor Cable Terminals and Outdoor Cable Terminals.

The 75 page Bulletin No. 720-2 describes various types of Junction and Joint Boxes. It covers construction features of Junction Boxes, Types, Split Joint Boxes, Joint Protecting Boxes, Special Junction Boxes, Wiring Diagrams and installations. Copy sent to all interested parties on request.

Bulletin No. 711 is a new bulletin on Indoor Cable Terminals. It is an 80 page bulletin and describes Single Conductor, Two Conductor, Three Conductor and Four Conductor Types. Cable rating data is also included which is particularly valuable. Copy sent on request.

The Outdoor Cable Terminal Bulletin describes Capnut Style Terminals, Clamp Style Disconnect Terminals and Socket Style Disconnect Terminals. This Bulletin No. 701 is a 136 page bulletin and contains some valuable data and illustrations of installations. Copy sent on request.

FIBRE HAND PORTABLE LIGHT

A non-conductive shock proof, fibre hand portable, with adjustable hook, that is equally suited for use in homes, factories, garages, and on telephone and power switchboards. Although weighing only 8 ounces it is sturdily constructed and will stand the weight of a 180 pound man without injury to the lamp. A special floating socket and four flexible springs protect the lamp from mechanical jars and breakage, and absorb shocks that would otherwise be transmitted to the lamp filament. Handle is of varnished hard maple to which is attached a notched fibre guard that prevents the light from rolling when placed on a flat surface. An additional feature is a fibre half shade to direct the light rays on the work and out of the user's eyes.

This portable will take lamps from 25 to 60 watts and is manufactured by the Benjamin Electric Mfg. Co., 128 South Sangamon street, Chicago, Ill.

UNDERCUTTING IN THE FIELD

After the commutator of a motor or generator has been put into condition through the use of a commutator resurfacer or portable rest; all having been accomplished with the brush rigging in place, what a nuisance it is to then have to strip off half the rigging to make room for undercutting tools.

Though designed as a general tool for shop and field, a power mica undercutter has just recently been designed by the Ideal Commutator Dresser Company, which specially covers such cases and can be used efficiently between rigging as close together as three and a half inches.

This undercutter is equipped with micrometer adjustment depth guage and slot guide and will take either saws or V-Millers. It is controlled by handles both behind and above the head, though the latter is seldom necessary as the spacing of the depth gauge and slot guide gives excellent equilibrium.

It is driven by a flexible shaft, connected to the rear of the head and specially constructed motor with thrust bearing and hangar base. The motor is hung behind the operator, the shaft passing under his arm; thus motor, shaft and head all swing in unison without dragging to the side.

Due to small saw diameter and the fact that the saw is mounted farthest forward and the operator's hands are behind or above the head, slots may be cut to within one-quarter inch of the risers.

For small motors, where it is difficult to get in, this undercutter can be used at most any angle from horizontal to nearly vertical.

ACCIDENT PREVENTION AT THE AMERICAN ROLLING MILL COMPANY'S PLANTS

That accident prevention is one of the major operating problems and that safety and production go hand in hand is the opinion of the management of The American Rolling Mill Company.

Positive substantiation that the working organization is thoroughly sold on the safety idea can be seen by a glance at the following records:

The Electrical Repair Department of the Middletown plant recently celebrated the end of a ten year period in which there was not a single lost time accident. During this period they worked 765,629 man hours. In recognition of this splendid record, they were tendered a banquet by the Company management and initiated into the "Ten Year Safety Club."

This department was not the charter member of the unique safety club however. Last year, the Electrical Construction Department at the Company's plant in Middletown completed a ten year no-accident period.

Both departments are units in the Maintenance Department. During the summer of 1928, during which time there was a great deal of construction work under way, the Middletown Maintenance Department ran up a record of 830,321 man hours without a lost-time accident.

The plant at Butler, Pa., (Columbia Steel Co.) had gone 70 days without a lost-time accident on January 1, 1929, and the record was yet unbroken. A remarkable record for an entire steel plant.